

**WISCONSIN AIR POLLUTION PERMIT APPLICATION
INSTRUCTION BOOKLET**

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VERSION 2.1**

**WISCONSIN DEPARTMENT OF NATURAL RESOURCES
P.O. BOX 7921
MADISON, WI 53707**

Natural Resources Board

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Bureau of Air Management

Donald F. Theiler, Director
Dale L. Ziege, Chief, Permits Section

Editor

Sandy Roethler, Compliance Section

Contributing Authors

Mary Oleson, Southern District Office
Lynda Wiese, Southern District Office
Kristin Hart, Southern District Office
Renee Lesjak, Southern District Office
Jeff Hanson, Permit Section

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CONTENTS OF THIS BOOKLET

The first 12 pages of this booklet are supplied on paper. Also supplied is a computer diskette containing an electronic copy of the APPENDICES referred to in this instruction booklet, form-by-form instructions which will assist you in filling out your application, and blank copies of all the application forms (these are Word Perfect 5.1 files). The following instructions are to access the WordPerfect files. IF YOU ARE UNABLE TO PRINT COPIES OF THE APPENDICES, FORM-BY-FORM INSTRUCTIONS, OR THE BLANK APPLICATION FORMS, YOU CAN REQUEST A PAPER COPY BY CALLING THE DEPARTMENT AT (608) 266-7718.

How to obtain a copy of the application forms, application form instructions, and the remainder of the instruction booklet from your diskette using DOS.

- 1) Make a directory on your hard drive called INST&APP.

To do this follow the following steps:

- a) We will use the following assumptions:
 - i) Your hard drive is labelled C:
 - ii) Your disk drive is labelled A:

If this is not the case use your own designations where we use C: and A:.

- b) At the C:\> prompt type **MD INST&APP <ENTER>**
<ENTER> means to strike the enter key.
- 2) Copy the contents of your instruction diskette to the new INST&APP directory. You will need approximately 1.5 Megabytes of hard drive space to complete this process.
 - a) Insert the instruction diskette into disk drive A:
 - b) At the C:\> prompt type **COPY A:*. * C:\INST&APP <ENTER>**
 - 3) Decompress the application forms, application form instructions, and the remainder of the instruction booklet.
 - a) At the C:\> prompt type **CD INST&APP <ENTER>**
 - b) At the C:\INST&APP> prompt type **PKUNZIP APPFORMS.ZIP <ENTER>**
 - c) At the C:\INST&APP> prompt type **PKUNZIP FORMINST.ZIP <ENTER>**
 - d) At the C:\INST&APP> prompt type **PKUNZIP INSTBOOK.ZIP <ENTER>**

You now have versions of the application forms, application form instructions, and the remainder of the instruction booklet in the following files on your hard drive:

Application forms are in C:\INST&APP\APPFORMS

Application form instructions are in C:\INST&APP\FORMINST

Remainder of the instruction booklet is in C:\INST&APP\INSTBOOK

All of the above are WordPerfect 5.1 documents.

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INTRODUCTION

This booklet provides detailed instructions on how to apply for an Air Pollution Operation Permit. It explains who needs to apply, when the application is due, what needs to be included in the application, and how to fill out the forms. This booklet also contains specific examples of how to calculate emissions. Terms in ***bold italic*** are defined in **APPENDIX A**. Names of Department contacts are listed in **APPENDIX B**.

What is an Operation Permit?

An Air Pollution Operation Permit outlines all the air pollution requirements that apply to an individual facility. It contains emission limitations and operating conditions to ensure that the facility is in compliance with federal and state air pollution rules. Having a single document that outlines applicable requirements gives the facility, the state, the U.S. Environmental Protection Agency (US EPA), and the public a better picture of what is expected of the facility.

Why is there a New Operation Permit Program?

Title V of the 1990 Clean Air Act Amendments requires each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operation Permits, called ***part 70 source*** permits. Wisconsin has included requirements that some additional facilities which are not required to obtain a federal ***part 70 source*** permit, receive a state (***non-part 70 source***) permit. Descriptions of these types of permits are included on page 5.

This new operation permit program will be different from Wisconsin's past program in a few ways. First, the new permits will be valid for a maximum of 5 years and must be renewed thereafter. Second, the applications require facilities to submit more information. Finally, the applications must be signed by a responsible corporate official to certify the information is correct and complete. You are still required to get a construction permit before beginning any new construction or modifications at your facility.

Application Time Line

Due dates for submitting applications differ, depending on your facility type and location. The first facilities must submit their permit applications to the DNR by May 1, 1994. **THESE FORMS ARE TIME-INTENSIVE. THE DEPARTMENT RECOMMENDS THAT YOU BEGIN PREPARING YOUR APPLICATION AT LEAST 6 MONTHS BEFORE YOUR DUE DATE.** See page 12 for more information on when permit applications are due. If you fail to submit a complete application by the specified due date, you will no longer be authorized to continue operation of your facility. Any continued operation will be a violation of state and/or federal air pollution regulations.

Status of Your Current Permit

As long as you submit your permit application on time, the conditions and limitations of any current permits or orders you have continue to apply until you receive a new Air Pollution Operation Permit.

Requirements for Permit Holders

Holders of an Air Pollution Operation Permit must:

- * Pay a fee based on the amount of air pollution they emit as required by s. 144.399, Wis. State Statutes.
- * Report compliance status at least annually to the Department.
- * Implement a compliance monitoring program and report monitoring results to the Department.
- * Operate according to the conditions and limitations of the permit to maintain compliance with the applicable air pollution rules.

Failure to do any of the above could result in enforcement action taken by the State of Wisconsin, or in the case of federal air pollution rules, enforcement action taken by the US EPA or civil law suits by private citizens.

DETERMINE IF YOU ARE REQUIRED TO GET A PERMIT

All facilities are required to get an air pollution operation permit unless they are exempt. There are two ways that your facility may be exempt from the requirement to obtain an air pollution operation permit. The first is if your facility consists of one of the **Specific Categories of Exempt Sources**. The second is if your facility meets all the criteria of the **General Category of Exempt Sources**.

Specific Categories

If your facility consists solely of one of the **Specific Categories of Exempt Sources** listed in **APPENDIX C**, you are exempt. Retain documentation of how you determined that your facility was exempt from the permitting requirements, as the DNR may request to see it at a later date. You may be required to maintain records of materials used, emissions, or production rates to demonstrate that your facility qualifies for the exemption. See the footnote in **APPENDIX C**. If your facility qualifies for this exemption YOU DO NOT NEED TO SUBMIT A PERMIT APPLICATION OR CONTINUE THROUGH THE STEPS OF THIS INSTRUCTION BOOKLET.

General Category

To determine if you are exempt under this category you must complete the following steps. **RETAIN ALL INFORMATION YOU USE IN YOUR DETERMINATION. YOU WILL NEED THIS INFORMATION FOR YOUR PERMIT APPLICATION, IF ONE IS REQUIRED, OR TO DEMONSTRATE THAT YOU QUALIFY FOR AN EXEMPTION.**

Step 1. Identify all the sources of air pollution at your facility, including *fugitive emissions*.

Step 2. Calculate the maximum theoretical emissions of each air contaminant from each *emissions unit*, operation and activity at your facility. Several resources that may assist you in calculating your emissions are listed in **APPENDIX D**. The air contaminants of concern are listed in Table 2 of Ch. NR 407, Wis. Adm. Code (see **APPENDIX E**). *Maximum theoretical emissions* is defined and explained, and example calculations are given in **APPENDIX F**.

When calculating your *maximum theoretical emissions*, include all *fugitive emissions*. Do not calculate the emissions from the following insignificant sources:

1. Maintenance of grounds, equipment and buildings, including lawn care, pest control, grinding, cutting, welding, painting woodworking, general repairs and cleaning. However, DO include use of organic compounds used as clean-up solvents for processes;
2. Maintenance of boilers, turbines, generators, heating and air conditioning systems;
3. Pollution control equipment maintenance;
4. Internal combustion engines used for warehousing and material transport, forklifts and courier vehicles, front end loaders, graders and trucks, carts and maintenance trucks;
5. Fire control equipment;
6. Janitorial activities;
7. Office activities;
8. Convenience water heating;
9. Convenience space heating units with heat input capacity of less than 5 million BTU per hour that burn gaseous fuels, liquid fuels or wood;
10. Fuel oil storage tanks with a capacity of 10,000 gallons or less;
11. Stockpiled contaminated soils;
12. Demineralization and oxygen scavenging of water for boilers;
13. Purging of natural gas lines; and
14. Sanitary sewer and plumbing venting.

An *emissions unit*, operation or activity at your facility also can be considered insignificant if the *maximum theoretical emissions* of each contaminant is less than the levels listed in Table 2 of Ch. NR 407, Wis. Adm. Code (see **APPENDIX E**). Multiple emissions units, operations and activities that perform identical or similar functions

(such as industrial space heaters) should be combined when determining whether a unit, operation or activity is insignificant.

Step 3. Total the maximum theoretical emissions of each air contaminant from all significant *emissions units*, operations and activities at your facility. Do not include the emissions from insignificant units in your calculation of total *maximum theoretical emissions*.

Step 4. Compare your maximum theoretical emissions to the criteria for a general exemption listed in **APPENDIX C**. If the *maximum theoretical emissions* of any air contaminant from your entire facility are less than 5 times the level specified in Table 2, your facility is considered an insignificant source of that air contaminant and you do not need to compare your total *maximum theoretical emissions* of that contaminant to the criteria of the general category of exempt sources.

If your facility meets all the criteria for the **general category of exempt sources**, YOU ARE NOT REQUIRED TO SUBMIT A PERMIT APPLICATION OR CONTINUE THROUGH THIS INSTRUCTION BOOKLET. Retain documentation of how you determined that your facility was exempt from the permitting requirements, as the DNR may request to see it at a later date.

DETERMINE WHICH PERMIT YOU MUST OBTAIN

Now that you know you need a permit, you must determine which type of permit you are required to get. There are four different types of permits under the new air pollution operation permit program.

1. A *part 70 source* permit,
2. A *non-part 70 source* permit,
3. A *synthetic minor, non-part 70 source* permit, and
4. A *general operation permit*.

The content of the permit application, the review procedure and the filing date differ depending on the permit type. The types of permits are described in more detail below.

Facility Type

The type of permit you apply for depends on your facility type. There are several steps to determine your facility type including: calculating your *potential to emit*, determining if you are a major source, and determining if you are a *part 70 source*. **RETAIN ALL INFORMATION YOU USE IN YOUR DETERMINATION. YOU WILL NEED THIS INFORMATION FOR YOUR PERMIT APPLICATION.**

Step 1. Calculate the potential to emit for each significant air contaminant emitted from each significant *emissions unit*, operation and activity at your facility. *Potential to emit* is defined and explained, and example calculations are given in **APPENDIX G**. Generally, the same *emissions units*, operations and activities you identified as insignificant when you determined that you needed a permit, are insignificant in this step also. In addition, any air contaminant emitted by your facility that you identified as insignificant when you determined that you needed a permit, are generally insignificant in this step also. You will need to consider insignificant sources and emissions only if excluding them would cause the facility to be classified as a minor source, but including them would cause the facility to be classified as a major source.

When calculating your *potential to emit*, do not include *fugitive emissions* in your calculations unless your facility belongs to one of the following categories:

1. All stationary source categories regulated by a New Source Performance Standard (NSPS) or a National Emission Standard for Hazardous Air Pollutants (NESHAPs) (standards under 40 CFR parts 60, 61 and 63). Fugitive emissions shall be considered only for those air contaminants that have been regulated for that category;
2. Coal cleaning plants with thermal dryers;
3. Kraft pulp mills;
4. Portland cement plants;
5. Primary zinc smelters;
6. Iron and steel mills;
7. Primary aluminum ore reduction plants;
8. Primary copper smelters;
9. Municipal incinerators capable of charging more than 250 tons of refuse per day;
10. Hydrofluoric, sulfuric or nitric acid plants;
11. Petroleum refineries;
12. Lime plants;
13. Phosphate rock processing plants;
14. Coke oven batteries;
15. Sulfur recovery plants;
16. Carbon black plants, furnace process;
17. Primary lead smelters;
18. Fuel conversion plants;
19. Sintering plants;

20. Secondary metal production plants;
21. Chemical process plants;
22. Fossil-fuel boilers, or combination thereof, totaling more than 250 million British thermal units per hour heat input;
23. Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
24. Taconite ore processing plants;
25. Glass fiber processing plants;
26. Charcoal production plants; or
27. Fossil-fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input.

Step 2. Total the potential to emit for each significant air contaminant emitted from all significant *emissions units*, operations and activities at your facility.

Step 3. Determine if your facility is a major source. Compare your facility's total *potential to emit* to the criteria for a *major source* (see **APPENDIX H**). If you are not located in a nonattainment area, you are a major source if your facility's *potential to emit* is:

1. 100 tons per year or more of any air contaminant;
2. 10 tons per year or more of any single *hazardous air pollutant* listed in **APPENDIX I**; OR
3. 25 tons per year or more of any combination of the *hazardous air pollutants* listed in **APPENDIX I**.

If your facility is located in an ozone nonattainment area, your major source status is as follows (see **APPENDIX J**):

1. If your facility is located in a "marginal" or "moderate" ozone nonattainment area and your *potential to emit* is 100 tons per year or more of *volatile organic compounds* or nitrogen oxides, you are a major source.
2. If your facility is located in a "serious" ozone nonattainment area and your *potential to emit* is 50 tons per year or more of *volatile organic compounds* or nitrogen oxides, you are a major source.
3. If your facility is located in a "severe" ozone nonattainment area and your *potential to emit* is 25 tons per year or more of *volatile organic compounds* or nitrogen oxides, you are a major source.
4. If your facility's potential to emit from just significant sources is less than, but close to, any major source threshold you must determine whether including insignificant sources would cause the potential to emit to be above a major source threshold. If including insignificant emissions units, activities, or operations in calculating potential to emit makes the source a major source, you must include them.

Step 4. Determine if your facility is a part 70 source. Your facility is a *part 70 source* if it falls into any of the following categories:

1. It is a *major source*;
2. Your facility is an electric utility affected by the acid rain provisions of the Clean Air Act. These sources have already been notified; OR
3. Your facility includes a solid waste incineration unit which has a maximum capacity greater than or equal to 250 tons per day.

Permit Type

If your facility is a *part 70 source*, you can apply for one of the following types of permits:

1. A *part 70 source* permit; OR
2. a *synthetic minor, non-part 70 source* permit if you qualify.

If your facility does not meet the criteria for a *part 70 source*, you are considered to be a *non-part 70 source* and

you must apply for a ***non-part 70 source*** permit.

Both ***part 70 sources*** and ***non-part 70 sources*** can apply for a ***general operation permit*** if one has been developed for the type of operation in question (see page 8). A ***general operation permit*** can apply to an entire facility, a process line or a specific ***emissions unit***.

Part 70 Source Permit

A ***part 70 source*** permit is designed to contain all applicable conditions and limitations. The US EPA will be involved in the review process, and the permits will be enforceable by US EPA, the State of Wisconsin, and any U.S. citizen. The permit application forms require more information than the forms used in the past. A ***part 70 source*** permit application must contain:

1. Identifying information, such as company name and address, and facility contacts.
2. Details on each significant ***emissions unit***, operation and activity, including alternative operating scenarios.
3. Emission calculations.
4. Applicable federal and state limitations.
5. An indication of the facility's compliance status with each limitation.
6. A plan for coming into compliance or a commitment to remain in compliance with applicable limitations.
7. Methods of demonstrating compliance with applicable limitations.
8. A schedule for submitting compliance certification reports at least annually.
9. A signed certification of application completeness and accuracy, and of facility compliance status.

Part 70 source permit applications must be submitted to the Department during 1994 or 1995 depending on where your facility is located. See page 12 for more information on when permit applications are due.

All ***part 70 sources*** must apply for a ***part 70 source*** permit unless they are qualified to apply for a ***synthetic minor, non-part 70 source*** permit.

Synthetic Minor, Non-Part 70 Source Permit

Some ***part 70 sources*** may avoid certain ***part 70 source*** permit application requirements by becoming a ***synthetic minor, non-part 70 source***.

A ***synthetic minor, non-part 70 source*** permit is a federally enforceable ***non-part 70 source*** permit. It will contain federally enforceable conditions that will limit your facility's ***potential to emit*** to levels that are less than the thresholds that make a facility a ***major source***.

Be sure that if you propose special limitations to make your facility a ***synthetic minor, non-part 70 source***, you can meet those limitations now and in the future. You want to retain future flexibility for growth. Violations of synthetic minor limitations are considered to be significant violations, subject to both Wisconsin and US EPA enforcement actions which could include civil and criminal prosecution, as well as citizen suits. Violations of these limitations could also make a facility a ***part 70 source***. Continued operation of the facility would be a violation of the federal Clean Air Act and the facility could not legally continue to operate until it applies for and obtains a ***part 70 source*** permit.

To qualify to become a ***synthetic minor, non-part 70 source*** you must meet all of the following criteria:

1. Your facility must not be an electric utility affected by the acid rain provisions of the Clean Air Act. These sources have already been notified;
2. Your facility must not be a solid waste incineration unit which has a maximum capacity greater than or equal to 250 tons per day; AND

3. The actual emissions of each air contaminant emitted by your facility for the 2 most recent years prior to submitting your application must be less than the thresholds for a **major source**.

If your facility does not meet all of the above criteria you must submit a **part 70 source** application by the **part 70 source** submittal date that applies to your facility.

To apply for a **synthetic minor, non-part 70 source** operation permit, you must:

1. Submit a complete application for a **non-part 70 source** operation permit.
2. SUBMIT YOUR COMPLETED APPLICATION TO THE DEPARTMENT BY THE PART 70 SOURCE SUBMITTAL DATE THAT APPLIES TO YOUR FACILITY **BUT ABSOLUTELY NO LATER THAN JULY 1, 1995, EVEN IF YOU HAVE A LATER PART 70 SOURCE DUE DATE.**** See page 12 for more information on when permit applications are due.
3. Submit information to show that the actual emissions of each air contaminant emitted by your facility for the 2 most recent years prior to the submittal of the application were less than the thresholds for a **major source**. If available, you must submit your actual emissions, as reported on the Air Emission Inventory for these 2 years.
4. Submit information to show that your facility meets the above criteria to be a **synthetic minor, non-part 70 source**.
5. Propose federally enforceable limitations on your facility's **potential to emit**. See **APPENDIX K**.

** All **synthetic minor, non-part 70 source** permit applications must be received by the **part 70 source** due date for their county, but absolutely no later than **JULY 1, 1995**. This is necessary because federal law requires that you either submit a **part 70 source** permit application or receive a **synthetic minor, non-part 70 source** permit by October 30, 1995. In order to have time to process your application for a **synthetic minor, non-part 70 source** permit by October 30, 1995, the Department is requiring that all applications for this type of permit be submitted by **JULY 1, 1995**.

If you propose that your facility be considered a **synthetic minor, non-part 70 source**, the Department will review your application and determine whether you have demonstrated that the above conditions have been met and whether your facility may be permitted as a **synthetic minor, non-part 70 source**. If the Department determines that your facility can be permitted as a **synthetic minor, non-part 70 source**, your application will be processed accordingly. If the Department determines that your facility cannot be permitted as a **synthetic minor, non-part 70 source**, you will be notified and will have until October 30, 1995, to submit a complete **part 70 source** permit application.

Non-Part 70 Source Permit

A **non-part 70 source** permit is designed to contain all applicable conditions and limitations. The permits will be enforceable by the State of Wisconsin. A **non-part 70 source** permit application must contain:

1. Identifying information, such as company name and address, and facility contacts.
2. Details on each significant **emissions unit**, operation and activity, including alternative operating scenarios.
3. Emission calculations.
4. A signed certification of application completeness and accuracy.

The main difference between **part 70** and **non-part 70** applications is that **non-part 70 sources** do not have to include applicable requirements, and other information associated with the facility's compliance status. **Non-part 70 source** permit applications must be submitted to the Department during 1997 or 1998 depending on where your facility is located. See page 12 for more information on when permit applications are due.

General Operation Permits

A *general operation permit* can be issued to an entire facility, a process line or a specific *emissions unit*. *General operation permits* issued for process lines or *emissions units* can be included as part of the permit issued to an entire facility. These permits contain the same types of limitations and conditions as other permits, but the application and review process is substantially simplified. Both *part 70 sources* and *non-part 70 sources* can apply for *general operation permits* if the following criteria are met:

1. The facility, process line or *emissions unit* is one of the following:
 - * Degreasing operations
 - * Ethylene oxide sterilization systems
 - * Small heating systems
 - * Crushing operations
 - * Bulk petroleum and gasoline plants
2. The facility is not a *part 70 source* that is submitting a *synthetic minor, non-part 70 source* permit application;
3. The facility, process line or *emissions unit* must be in compliance with all applicable limitations and requirements;
4. The facility, process line or *emissions unit* is not a *major source* subject to the requirements of ch. NR 408, Wis. Adm. Code for ozone nonattainment areas (see **APPENDIX J** for a description of the nonattainment areas in Wisconsin);
5. The facility, process line or *emissions unit* is not subject to the requirements of *Prevention of Significant Deterioration (PSD)*.
6. The facility, process line or *emissions unit* is not an electric utility affected by the acid rain provisions of the Clean Air Act;
7. If the facility, process line or *emissions unit's maximum theoretical emissions* of particulate matter are greater than 5.7 pounds per hour, then the facility must not be located in or impacting an area designated as nonattainment for particulate matter;
8. If the facility, process line or *emissions unit's maximum theoretical emissions* of sulfur dioxide are greater than 9.0 pounds per hour, then the facility must not be located in or impacting an area designated as nonattainment for sulfur dioxide;
9. The facility, process line or *emissions unit* does not have the potential to cause or exacerbate a violation of any ambient air quality standard or ambient air increment; AND

If your facility or a process line or *emissions unit* at your facility meets the above criteria and you wish to apply for a *general operation permit*, please contact the Bureau of Air Management at (608) 266-7718 to request the appropriate application forms. Any applications for *general operation permits* must be submitted by your facility's application due date. See page 12 for more information on when permit applications are due.

The Department retains the right to require any facility to submit a *part 70 source* or *non-part 70 source* permit application for their facility or any process lines or *emissions units* at their facility.

BASIC INFORMATION ABOUT THE PERMIT APPLICATION FORMS

Some background information is needed before you attempt to fill out the forms. Read this section carefully.

Applying for Confidentiality

All information submitted to the Department is part of the public record. The Department can keep confidential parts of your permit application except emissions data, if you demonstrate that the information is entitled to protection as a *trade secret*.

You must specifically identify all information in the permit application for which you are seeking confidential status. In addition to the copies of the complete application that are required, you must also supply the Department with 3 copies of the application with all confidential material deleted from forms and other materials which are submitted on paper. If you are submitting your application in electronic format, file one diskette with all confidential material deleted and one diskette that has it included.

To apply for confidential status you must submit a written application in affidavit form that includes the applicant name and address, the position of the individual filing, the specific type of information for which confidential status is sought, and the facts and supporting legal authority believed to constitute a basis for obtaining confidential treatment. For details on filing for confidential status, see s. NR 2.19, Wis. Adm. Code. Applying for confidential status will not delay the permit review process.

Electronic Permit Application System

An electronic permit application system is available. We urge you to use this system to fill out your permit application forms. Using the diskettes should save you time. The electronic permit application software is a menu-driven program designed to be user-friendly. It does not require the use of a mouse. Once the program has been accessed, you should be able to move through the various application forms easily.

The Software

The system diskette is self-installing. When you insert the diskette, the program will first scan your computer to determine if there is enough disk space available to run the program. In order to run the program, your computer must be DOS-based with the following minimum requirements: AT/286, 1 Mb RAM, 30-40 Mb hard drive, with a 3.5" low density disk drive and a 24-pin printer. The program takes up about 3 Mb of hard disk space. If you are having trouble using the electronic application system, call the Department at (608) 266-7718.

Prefilled Information

Sources on Wisconsin's Emission Inventory should have received electronic forms that are partially filled out. If there is prefilled information, it was taken from the *Air Emission Inventory* report that your facility fills out annually. CAREFULLY CHECK THIS INFORMATION TO ENSURE THAT IT IS CORRECT. IF IT IS NOT PLEASE REPLACE IT WITH THE CORRECT INFORMATION. Be sure to correct this on your next annual update of the emissions inventory.

In some cases, *emissions unit* identification numbers may be prefilled. If they are, do not change the unit identifications unless necessary to provide accurate information. If you do change a prefilled identification number, please use form 4530-135 to explain this change. The software allows you to add additional *emissions units* when necessary. Also, you can update the prefilled information or delete it if it does not need to be included in the application (e.g., insignificant units, units no longer in operation, etc.).

Forms

Figure out which forms you need to use based on the information below. The following is a list of all the permit application forms.

Facility Summary Forms (Fill out one of each):

- 4530-100 Facility Identification
- 4530-101 Facility Plot Plan
- 4530-102 Source Site Description (-102, -102A, -102B)
- 4530-134 Index of Air Pollution Permit Application Forms

Stack Identification Form 4530-103 (Fill out one form for each stack at your facility that exhausts significant emissions.)

Emissions Unit Forms (Fill out one for each significant *emissions units* at your facility):

- 4530-104 Boiler or Furnace Operations
- 4530-105 Storage Tanks
- 4530-106 Incineration
- 4530-107 Printing Operations
- 4530-108 Painting and Coating Operations
- 4530-109 Miscellaneous Processes

Control Equipment Forms (Fill out one for each piece of air pollution control equipment at your facility):

- 4530-110 Miscellaneous Control Equipment
- 4530-111 Condensers
- 4530-112 Adsorbers
- 4530-113 Catalytic or Thermal Oxidation
- 4530-114 Cyclones or Settling Chambers
- 4530-115 Electrostatic Precipitators
- 4530-116 Wet Collection Systems
- 4530-117 Baghouses and Fabric Filters

Compliance Demonstration Forms* (See form instructions on page 29):

- 4530-118 Compliance Certification - Monitoring and Reporting
- 4530-119 Continuous Emission Monitoring
- 4530-120 Periodic Emission Monitoring using Portable Monitors
- 4530-121 Monitoring Control System Parameters or Operating Parameters
- 4530-122 Monitoring Maintenance Procedures
- 4530-123 Stack Testing
- 4530-124 Fuel Sampling and Analysis
- 4530-125 Recordkeeping
- 4530-130 Current Emissions Requirements and Status of Unit
- 4530-131 Emission Unit Compliance Plan - Commitments and Schedule
- 4530-132 Current Emissions Requirements and Status of Facility
- 4530-133 Facility Requirement Compliance Plan

***Non-part 70** sources do not have to submit these forms. Future renewal applications will contain compliance requirements for **non-part 70 sources**, and they will be required to submit these forms at that time.

Pollutant Summary Forms (See instructions on individual forms):

- 4530-126 Emission Unit Hazardous Air Pollutant Summary
- 4530-127 Facility Hazardous Air Pollutant Summary
- 4530-128 Emission Unit Summary
- 4530-129 Facility Emissions Summary

Form Order

The forms are designed to be filled out in a certain order. Start by filling out the overall facility forms, 4530-100, -102 and then -101. Then fill out the stack identification form 4530-103 for your first stack and the forms for *emissions units* and control equipment related to this stack. Then fill out the *emissions units* pollution summary forms and compliance demonstration forms related to this stack. Repeat this for each stack at your facility. After completing all the stack identification and related forms, fill out the facility pollutant summary forms, the facility compliance status forms and the index.

Examples:

1. Coating operation with Catalytic Incinerator having two separate chambers (S01, S02, P01, C01, C02). For this example, this operation is a part 70 source.
 - a. stacks = S01 & S02: 1 form 4530-103 (refer to stack form instructions)
 - b. coating line = P01: 1 form 4530-108
 - c. catalytic incinerator = C01 & C02: 2 forms 4530-113
 - d. emission unit hazardous air pollutant summary for P01: 1 form 4530-126
 - e. emission unit summary for P01: 1 form 4530-128
 - f. emissions requirements and status of P01: 1 form 4530-130
 - g. compliance demonstration for P01: form 4530-118 and at least one of 4530-119 through -125.
 - h. compliance plan commitments and schedule for P01: form 4530-131
2. Foundry green-sand shake-out and no-bake shake-out lines connected to a baghouse (S10, P11, P12, C10). This foundry is a non-part 70 source.
 - a. stack = S10: 1 form 4530-103
 - b. green-sand shake-out and no-bake shake-out lines = P11 & P12: 2 forms 4530-109
 - c. baghouse = C10: 1 form 4530-117
 - d. emission unit hazardous air pollutant summary for P11 & P12: 2 forms 4530-126
 - e. emission unit summary for P11 & P12: 2 forms 4530-128
 - f. emissions requirements and status of P11 & P12: not required because it is a non-part 70 source.
 - g. compliance demonstration for P11 & P12: not required because it is a non-part 70 source.
 - h. compliance plan commitments and schedule for P11 & P12: not required because it is a non-part 70 source.
3. Boiler connected to a cyclone and a baghouse, in series, exhausting from one stack (S01, B01, C01, C02) and a metal parts cleaner/degreaser unit (S02, F01). This example is a part 70 source.
 - a. stack = S01 and S02: 2 forms 4530-103
 - b. boiler = B01: 1 form 4530-104
 - c. cyclone = C01: 1 form 4530-114
 - d. baghouse = C02: 1 form 4530-117
 - e. metal parts cleaner = F01: 1 form 4530-109
 - f. emission unit hazardous air pollutant summary for both B01 and F01: at least 2 forms 4530-126
 - g. emission unit summary for B01 & F01: 2 forms 4530-128
 - h. emissions requirements and status of B01 & F01: 2 forms 4530-130
 - i. compliance demonstration for B01: form 4530-118 and at least one of 4530-119, through -125.
 - j. compliance demonstration for F01: 1 form 4530-118 and at least one of 4530-119 through

-125.

- k. compliance plan commitments and schedule for B01: form 4530-131
- l. compliance plan commitments and schedule for F01: form 4530-131

Alternative Operating Scenarios

While filling out your permit application, consider all the different operating scenarios you might want to operate under during the 5-year life of your permit. On some of the forms it is easy to address alternatives. For example, the printing form 4530-107 asks you to give information for all inks you currently use in your press and all inks you may want to use in the press for the next five years. Write "alternative" next to the inks that may be used in the future. Other forms don't lend themselves as easily to describing alternative operating scenarios. In this case, fill out a 4530-135 form for additional information to describe the alternative operating scenario.

Application Completeness

Be sure that all the appropriate blanks and forms are filled in. If you are using hard copy forms, you will have to do this check visually. Required fields are shaded on the hard copy forms. If you are using electronic forms, you can generate a completeness report to do this automatically. Note that on electronic forms, if you have indicated on form 4530-118 that you will fill out three Compliance by Recordkeeping forms (4530-125), the computer will have generated three forms. If you have only filled out 2 forms, the completeness check will catch this discrepancy and you will either have to change the number of forms needed or complete the third form.

The Department has 20 days from the date you submit your application to determine if your submittal is complete. You will be notified if the Department determines that your application is incomplete. You will then have 30 days to submit the missing information. The Department reserves the right to ask for additional information even after the application is initially deemed complete.

Submitting Your Permit Application

Submit the application to the following address.

Wisconsin Department of Natural Resources Bureau of Air Management AM/7 Permits Section P.O. Box 7921 Madison, WI 53707-7921
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You are required to submit a complete application by the specified due date as well as any additional information requested by the Department by the date specified. If you fail to do so, you will no longer be authorized to continue operating your facility. Any continued operation will be a violation of state air pollution regulations, subjecting you and your company to possible penalties, forfeitures, fines, and imprisonment. In addition, **part 70 sources** would be in violation of federal regulations and also subject to possible citizen suits.

Permit applications are due according to the dates outlined in **APPENDIX L**. The application filing date differs depending on your facility type. The due date for your facility's permit application is the date in the appropriate column for **part 70** or **non-part 70 sources** corresponding to the county in which you are located. If your facility is located in 2 or more counties, the date your application is due is the latest date listed for any of the counties in which you are located.

The Department can grant an extension of the permit application due date up to 60 days. Any extension granted to a **part 70 source** cannot go beyond November 15, 1995. To be eligible for an extension you must:

1. Apply for the extension in writing at least 30 days but not more than 90 days before the application is due. (Note: the Department does have the ability to waive the 30-day requirement if an emergency occurs that makes it impossible to meet the deadline.)

2. Demonstrate that the reason the applicable due date cannot be met is beyond your control.

IF YOU WANT YOUR FACILITY TO BE CONSIDERED A SYNTHETIC MINOR, NON-PART 70 SOURCE, YOU MUST SUBMIT YOUR PERMIT APPLICATION BY THE DUE DATE FOR **PART 70 SOURCES BUT ABSOLUTELY NO LATER THAN JULY 1, 1995.**

This is necessary because federal law requires that you either submit a *part 70 source* permit application or receive a *synthetic minor, non-part 70 source* permit by October 30, 1995. In order to have time to process your application for a *synthetic minor, non-part 70 source* permit by October 30, 1995, the Department is requiring that all applications be submitted by **JULY 1, 1995.**

FORM-BY-FORM INSTRUCTIONS

This section is designed to supplement the instructions found on the back of each application form or on the help screens of the electronic forms. It offers expanded explanations of some of the items and examples.

If an item doesn't fit your particular situation, first check the instructions for clarification. If the item still doesn't seem to apply to you, write in "Not Applicable," or, if you can't answer it in the space provided, you can fill out form 4530-135, the supplemental information form to explain how your particular situation makes you a special case. Attach as many supplemental information forms as necessary. If you are using paper forms, you can make extra copies of any of the forms as you need them.

There are many places in these forms where documentation is required or where we want you to show the calculations you used to make certain claims. Be sure all the documentation is attached to the hard copy forms when you send them in, or that they are enclosed with the diskette if you file electronically.

Some items on the paper forms are shaded and on the computer screens are indicated in yellow. These items are mandatory and must be filled in for your application to be complete. Items that are not shaded on the paper forms and not indicated in yellow on the computer screens must be filled out only if they are applicable.

Form 4530-100 -- Facility Identification

This form serves as the cover sheet to your completed permit application and provides identifying information for your facility. Everyone needs to fill out this form.

Item 6. Standard Industrial Classification (SIC). The SIC Code for your industry can be found in the Standard Industrial Classification Manual put out by the Office of Management and Budget. The code for your facility can also be found on the first page of your facility's annual *Air Emissions Inventory* Report.

Item 7. Facility Identification (FID) Numbers. Each form asks for your FID. This 9-digit number can be found at the top of each page of your facility's annual *Air Emissions Inventory* Report. If you've never before had contact with the Department, you may not have ever been issued a FID number. In this case, you should enter "88888888" in the blank. This is a signal to the Department to assign your facility a FID number.

Item 9. Type of Permit. The same application forms will be used to apply for both construction permits and operation permits. Indicate the type of operation permit you are applying for: a *part 70 source* permit, a *non-part 70 source* permit, or a *synthetic minor source* permit. If you are a new source or are modifying your facility, you must check the boxes for both a construction permit and an operation permit. (The booklet **Expanding Industry in Wisconsin** explains the requirements for new and modified sources. If you would like a copy call the Department at (608) 266-7718 to request one. If you want an expedited construction permit, read the section in that booklet titled "Air Pollution Control Construction Permit Processing Time." THIS OPTION APPLIES ONLY TO NEW OR MODIFIED SOURCES APPLYING FOR A CONSTRUCTION PERMIT.) If you are applying for an operation permit even though you are not required to, check "elective operation permit."

Item 10. Attainment/Nonattainment Status. To find out if your facility is located in a "nonattainment" area, turn to **APPENDIX J** of this instruction booklet. Areas are designated "nonattainment" by pollutant. For example, your county may be nonattainment for ozone but attainment for all of the other criteria pollutants. If your area is attainment for all pollutants, write in "none" or "not applicable."

Form 4530-101 -- Facility Plot Plan

This form will be easier to fill out after you have filled out form 4530-102. If you haven't completed 102 yet, do so now.

Every facility must fill out this form and attach a plot plan or blueprint of the plant layout. When preparing your plot plan, use form 4530-102 to ensure that you have included all emissions points. A plot plan consists of a scale drawing, preferably a blueprint, of a birds-eye view of your entire facility including all buildings and property lines. Indicate North on your plot plan and include the scale of the drawing such as 1 inch : 10 feet or 1 cm = 1 m. Label each building with its maximum height, and all length and width dimensions.

Indicate the location of all the stacks. Label these stacks with the same identification numbers that you used on form 4530-102. If there are several stacks connected to one process, indicate the location of each stack, and label them all with the same identification number. THE PLOT PLAN IS THE ONLY PLACE WHERE DUPLICATES OF A STACK IDENTIFICATION NUMBER ARE ALLOWED.

The information on this form is important for air pollutant dispersion modeling. This modeling is used to determine whether your facility's emissions will meet the National Ambient Air Quality Standards (NAAQS). Be as accurate as possible when completing this form.

Form 4530-102 -- Source and Site Description

FILL OUT THIS FORM BEFORE FILLING OUT FORM 4530-101.

Every facility must fill out this form. This form has three parts: 102, 102a, and 102b. You should refer to this form when filling out the rest of the permit application to make sure that your numbering scheme is consistent and that nothing has been left out. This section will be used extensively by the permit reviewer to get a picture of how your facility works and to understand which forms go with which pieces of equipment.

You are required to identify all *emissions units*, operations, and activities in your permit application. Insignificant *emissions units*, operations and activities need only be listed on form 4530-102b. YOU DO NOT NEED TO PROVIDE ANY OTHER INFORMATION OR FILL OUT ANY OTHER FORMS FOR INSIGNIFICANT UNITS.

4530-102 Item 1. Source Description. Provide a general, but comprehensive description of the air pollution sources at the plant. This description should list the individual *emissions units* (e.g., one wood-fired boiler, one wood furniture paint booth, and two sawing operations) and any stacks or roof vents associated with them.

Example: Acme Manufacturing produces hardwood veneer paneling. The mill runs a veneer cutting operation, a veneer gluing operation, a panel trim operation, as well as finish sanding and varnishing lines. Three wood-fired boilers provide the mill with steam for process and general heating needs. Sawdust and sanderdust from the production lines are collected by a cyclone and conveyed to the two smaller boilers. The cyclone collector has its own stack, and the gluing and varnishing lines each have their own stacks.

Acme operates two identical 500 horsepower boilers which fire a mixture of sawdust and sanderdust. The emissions from these two boilers are not controlled and go to a common stack. The third boiler fires hog fuel from the sawmill and debarking operation. This boiler has its own stack, and its emissions are controlled by a multiple-cyclone collector.

4530-102 Item 2. Site Description. Give a general description of the area surrounding the plant. This description should include the location of the plant relative to major highways and other landmarks. Indicate whether the plant is near a residential area, in an industrial park, in a rural area, etc. If the plant is located in one or more "nonattainment" areas, these should be identified (see **Appendix J** for a list of nonattainment areas). In addition, topographical features of the surrounding countryside, such as bluffs, streams, and river valleys, should be described.

4530-102a Significant emissions units. Describe all significant *emissions units*. These will all be included in the rest of your permit application. See page 2 for an explanation of significant *emissions units*. Include in your description equipment specifications for each *emissions unit* such as manufacturer and model number, maximum operating capacity of the equipment, fuels that may be used, and coatings or solvents that may be used. Assign *emissions unit* and stack identification numbers to the equipment at this time.

Assigning identification numbers. In some cases, *emissions unit* identification numbers may be prefilled on the forms you received. If they are, do not change the unit identifications unless necessary to provide accurate information. If you do change a prefilled identification number, please use form 4530-135 to explain this change. The format for identifying all stacks, processes, boilers, control devices, etc., is a single letter followed by two numbers. The letter identifies what the unit is: S=stack, P=process, B=boiler or furnace, C=control device, I=incinerator, F=fugitive, or T=tank. The two numbers should range from 01 to 99 (zero needs to be in front of single digit values, 1-9). The numbering does not have to start at 01.

Emissions units that you may think of as indoor "fugitive" emissions (e.g., a degreaser or paint touch-up area) should be assigned a stack or vent that exhausts outside the building. Storage tanks should not be assigned a stack.

TO AVOID CONFUSION, DO NOT DUPLICATE NUMBERS FOR EMISSION UNITS AT THE SAME FACILITY (I.E. THERE SHOULD NEVER BE TWO P01S, TWO S01S, TWO T01S, ETC.)! If you are using electronic forms, the computer will notify you when you are using a duplicate identification number and ask if you wish to delete the original information or supply a different number.

Examples of identification format:

- 1) Two *emissions units* exhausting through one control device and out one stack could be identified as S01, C01, P01, P02.
- 2) If the same facility also had a few tanks, and another single *emissions unit* exhausting through two control devices and out one stack, the identification could follow as S02, P03, C02, C03; T10, T20, T99.
- 3) A source of *fugitive emissions*, such as a sand storage pile, could be identified as F99.

Keep the first digit of the identification number the same for associated *emissions unit(s)* and stack(s). For example, P10 correlates to S10. The second digit of the identification number can be changed to identify the individual *emission units* exhausting to one stack. For example:

S10: I10, P11, P12, C11 (for I10), C12 (for P11 and P12)
S20: P21, P22, C21 (for P21 and P22)

Example: Unit description:

A. Boiler B23, S13, C23 - 32 MMBTU/hr Hog Fuel Boiler
Manufacturer & Model: XYZ Model Q-45
Boiler Type: Air-swept stoker
Max. Continuous Heat Input Rate: 32.0 MMBTU/hr
Fuel Moisture: 35 percent
Installation Date: April 1990
Air Pollution Control: Multiple Cyclone

B. Boilers B21 and B22, S12 - 500 HP Fines Boilers

Manufacturer & Model: Kewaunee AQ-45

Boiler Type:	Horiz. Return Tube
Max. Continuous Heat Input Rate:	23.9 MMBTU/hr each
Fuel Moisture:	15 percent
Installation Date:	1921 (?)
Air Pollution Control:	none

C. Process P30, S20 - Veneer Cutting Operation

Process Throughput:	1.1 tons/hr
Air Pollution Cntrl.:	none

D. Process P31, S21 - Veneer Gluing Operation

Process Throughput:	1.1 tons/hr
Glue Type:	Phenolic Resin
Air Pollution Cntrl.:	none

E. Process P32, S22 - Panel Trim Operation

Process Throughput:	1.1 tons/hr
Air Pollution Cntrl.:	none

F. Process P33, S23 - Finish Sanding Operation

Process Throughput:	1.1 tons/hr
Air Pollution Cntrl.:	none

G. Process P34, S24 - Topcoating Process

Process Throughput:	7.2 gal/hr
Coatings Used:	TopKlr 107 (water-base) Mighty Kleer (oil-base)
Air Pollution Cntrl.:	none

4530-102b Insignificant emissions units. You must list all insignificant *emissions units*, operations and activities at your facility on this form. Do not fill out any other form in your permit application for insignificant *emissions units*. Insignificant *emissions units* are described on page 2 of this booklet. Form 4530-102b contains a checklist of several insignificant *emissions units*, operations and activities. Note that these are quite general and will cover a number of specific activities. Try to be as general as possible when determining if an *emissions unit*, operation or activity is insignificant. The Department encourages you not to spend a lot of time on insignificant units. Identify them and move on to the rest of the application.

Form 4530-103 -- Stack Identification

Information you provide on these forms is used by the Department primarily for computer dispersion modeling that tells us whether your facility will be likely to meet ambient air quality standards. Therefore, it is important that you be as accurate as possible when completing this form. The permit that the Department issues may contain requirements that your stacks meet the specifications described in your application.

The Department will combine the plot plan data with the information you provide on each form 4530-103 to run a computer program. It is imperative that we understand which stack on your plot plan goes with which stack identification form.

You must fill out one form for each stack, roof vent, wall vent, etc., that vents the *emissions unit(s)* in your permit application. These stacks may vent *emissions units* such as your boilers, incinerators, paint booths, printing presses, solvent cleanup stations, chemical reactors, grinding stations, cutting or gluing areas, and any other significant *emissions units* in your plant. Storage tanks will not have a stack form associated with them.

If there are a number of stacks connected to one *emissions unit*, report them all under one representative stack, and fill out only one stack form. Attach form 4530-135 to further explain this situation. Please include a supplemental list which details the individual stack parameters. Tell us how many stacks are being combined under this "dummy" stack. Use a simple average of each of the stack parameters (height, diameter, flow rate, and temperature) as the representative stack's parameters. Note: The pollutant emission rate should always be the sum total from all stacks involved and not the average -- this information will be used on form 4530-128.

Item 3 Listing Stack Numbers. List the identification number of the stack. This should be the number you assigned to the stack in your plot plan on form 4530-101 and your source description on form 4530-102.

Item 4 Listing Process Numbers. Figure out which application forms you will need to fill out for each *emissions unit* that vents out this stack (4530-104 through -109). On the blanks provided, list the *emissions unit* identification number(s) next to the appropriate form number. For example, enter "B01" in the blank next to "4530-104" for a boiler. The *emissions units* forms are:

4530-104	Boiler or furnace operations
4530-106	Incineration
4530-107	Printing operations
4530-108	Painting and coating operations
4530-109	Miscellaneous processes

Once the identification numbers are entered, the computer then generates the form for each *emissions unit*.

Item 6. Fugitive Emissions. If there is no actual stack or vent associated with an *emission unit*, check the box "this stack serves to identify *fugitive emissions*." You do not need to fill out the rest of this form. An example of an *emissions unit* which has *fugitive emissions* is a material storage pile located outside. Please note that if emissions from a process, *emissions unit*, etc. escape from the building in some way, you should assign a stack to that process, *emissions unit*, etc. (e.g., a degreaser or paint touch-up area). That stack may have to be a "dummy" stack with parameters that approximate the release point parameters.

Form 4530-104 -- Boiler or Furnace Operation

Complete one form for each boiler or furnace in your plant. Do not fill out this form for insignificant *emissions units*. See page 2. Be sure the unit identifications and any prefilled information are correct.

Item 5. Listing Control Equipment. Check whether the *emissions unit* is controlled or not. If it is controlled, figure out which application forms you will need to fill out for this control equipment (4530-110 through -117). List the control device identification number(s) for this *emissions unit* on the blank next to the appropriate form number. For example, enter "C01" in the blank next to "4530-117" for a baghouse. The eight control equipment forms are:

4530-110	Miscellaneous Control Equipment
4530-111	Condensers
4530-112	Adsorbers
4530-113	Catalytic or Thermal Oxidation
4530-114	Cyclones or Settling Chambers
4530-115	Electrostatic Precipitators
4530-116	Wet Collection Systems
4530-117	Baghouses and Fabric Filters

Item 11. Fuels. Complete the table for all fuels that you use or are capable of using with this boiler or furnace. Remember to address any Alternate Operating Scenarios, and label any alternative fuels as such. Include only fuels that you are currently capable of using and that are not prohibited by any permit, plan approval or order.

The fuels and fuel data provided in this table will be used to establish any permit conditions necessary to ensure compliance with emission limits and ambient air quality standards. They will be the only fuels your permit will allow you to use, so make sure the list is complete.

Fuel data such as the higher heating value, sulfur content, and ash content can often be obtained from your fuel supplier. Fuels can also be tested to provide this information. Be sure to include the units such as BTU/lb of coal or BTU per gallon of oil. Sulfur and ash content should be given as weight percents. If the heating value is provided as a range, use the lower number to show a worst case.

Example: Ye Olde Manufacturing operates a multiple fuels boiler built by Combustion Engineering in 1955. This boiler is equipped to burn natural gas, residual fuel oil, distillate fuel oil, and a variety of solid fuels. Ye Olde wants to be permitted to burn any of these fuels at any time to maintain a high degree of operational flexibility.

To complete form 4530-104, Ye Olde must describe the fuel characteristics for all of the fuels it is capable of burning. The table below lists the characteristics of just two of the fuels Ye Olde Manufacturing wants included in its permit. They obtained the information from their fuel supplier.

<u>Fuel Characteristics</u>	<u>Primary Fuel</u>	<u>Backup Fuel #1</u>
Fuel Name	Bitum. Coal	Nat. Gas
Higher Heating Value	10,000 BTU/lb	1000 BTU/ft ³
Maximum Sulfur Content	2.8% (w/w)	0.00% (w/w)
Maximum Ash Content	9.5% (w/w)	0.00% (w/w)
Excess Combustion Air	15%	10%
Moisture Content	2.5%	0.0%
Maximum Hourly Consumption	3.3 tons	0.07 x 10 ⁶ ft ³
Actual Yearly Consumption	15,000 tons	50 x 10 ⁶ ft ³

In the table above, the heating value, sulfur and ash contents, and hourly fuel consumption values represent "worst case" assumptions from the air pollution perspective. Please note that the units for heating value vary with the fuel type (e.g., BTU per pound for solid fuel, BTU per cubic foot for gaseous fuel). Similarly, the units for fuel consumption are fuel-dependent.

Form 4530-105 -- Storage Tanks

Complete one form for each storage tank at your facility. Do not fill out this form for insignificant *emissions units*. See page 2. This is a two-page form. You must complete both pages. Be sure the unit identifications and any prefilled information are correct.

Item 4 Listing Control Equipment. Figure out which application forms you will need to fill out for this control equipment (4530-110 through -117). List the control device identification number(s) for this *emissions unit* on the blank next to the appropriate form number. For example, enter "C01" in the blank next to "4530-117" for a baghouse. The eight control equipment forms are:

4530-110	Miscellaneous Control Equipment
4530-111	Condensers
4530-112	Adsorbers
4530-113	Catalytic or Thermal Oxidation
4530-114	Cyclones or Settling Chambers
4530-115	Electrostatic Precipitators
4530-116	Wet Collection Systems
4530-117	Baghouses and Fabric Filters

Item 12. Tank Types. Indicate the type of tank according to these definitions:

Open Top Tanks do not have roofs. The stored liquid is exposed to the open air.

Pressurized Tanks are equipped with a pressure/vacuum vent that is set to prevent emissions caused by boiling and breathing losses due to daily temperature or barometric pressure changes. A tank is considered pressurized if the pressure vent is set above 2.5 pounds per square inch gage (psig).

Fixed Roof Storage Tanks may be vertical or horizontal. Typically they consist of a cylindrical steel shell with a permanently affixed roof, which may vary in design from cone- or dome-shaped to flat. Fixed roof tanks are either freely vented or equipped with a pressure/vacuum vent.

External Floating Roof Storage Tank consists of an open top cylindrical steel shell equipped with a roof that floats on the surface of the stored liquid.

A fixed roof tank with an Internal Floating Roof looks similar to a fixed roof tank from the outside. Inside the tank is a deck which floats on the surface of the liquid and allows for expansion and contraction of the liquid while minimizing evaporation losses.

Variable Vapor Space Storage Tanks are equipped with expandable vapor reservoirs to accommodate vapor volume fluctuations due to daily temperature and barometric pressure changes.

Items 13-17. Note: these questions apply to particular types of storage tanks. Fill out only the questions that apply to the type of tank that this form is for. Use **AP-42** Chapter 12, STORAGE OF ORGANIC LIQUIDS (make sure it includes Supplement D) when calculating emissions from your storage tanks.

Item 18. Stored Materials. You need to complete the table for all materials that are stored in this tank. Remember to address any Alternate Operating Scenarios, and label any alternative liquids as such. Material molecular weight, material vapor pressure, and material liquid density, if not available from your supplier, can be found in chemical handbooks or **AP-42** (see **APPENDIX D**).

Example: Chem-All's storage tank T21 presently is used to store either ethanol or isobutanol. In the future the tank might be used exclusively for the storage of allyl alcohol. To fill out the table, they turn to their copy of **AP-42**. Chapter 12 of this document contains a table with liquid densities, molecular weights and vapor pressures at various temperatures for a number of organic liquids. By looking at past records, the facility can estimate an annual throughput, storage pressure, and an average daily amount stored for each of the liquids. Here is how Chem-All fills out the table for storage tank T21:

Material Stored	Annual Thruput (gal/yr)	Daily Average Amount Stored (gallons)	Material Molecular Weight (lb/lb-mol)	Material Vapor Pressure (psia)	Storage Pressure (psia)	Average Storage Temp (° F)	Material Liquid Density (lb/gal)
Ethanol	210,000	21,000	46.07	0.406	14.7 ± 0.5	50	6.610
Isobutanol	165,000	10,000	74.12	0.097	14.7 ± 0.5	50	6.712
ALTERNATIVE SCENARIO: Allyl alcohol	195,000	18,000	58.08	0.193	14.7 ± 0.5	50	7.125

Item 21. Operations Served by this Tank. This information is necessary to identify regulations that apply to the

storage tank, so be sure to fill out completely.

Form 4530-106 -- Incineration

This form is used for incinerators that burn waste. **Do not use this form for control equipment.** If you have an incinerator that is used to control organic compound emissions from a process you should use form 4530-113.

Complete one form for each incinerator used to burn waste materials. Be sure the unit identifications and any prefilled information are correct. Most of the information for this form can be obtained from your incinerator manufacturer.

Item 5. Listing Control Equipment. Check whether the *emissions unit* is controlled or not. If it is controlled, figure out which application forms you will need to fill out for this control equipment (4530-110 through -117). List the control device identification number(s) for this *emissions unit* on the blank next to the appropriate form number. For example, enter "C01" in the blank next to "4530-117" for a baghouse. The eight control equipment forms are:

4530-110	Miscellaneous Control Equipment
4530-111	Condensers
4530-112	Adsorbers
4530-113	Catalytic or Thermal Oxidation
4530-114	Cyclones or Settling Chambers
4530-115	Electrostatic Precipitators
4530-116	Wet Collection Systems
4530-117	Baghouses and Fabric Filters

Item 10. Materials to be Burned. List all materials that will be burned in your incinerator. Remember to address any Alternate Operating Scenarios, and label any alternative materials as such. Refer to previous facility records, your incinerator manufacturer, and trade associations.

Example: Central City Memorial Hospital is submitting a permit application for their hospital incineration unit. The incinerator has a rated capacity of 200 pounds per hour, so it will not use add-on emission control equipment. The hospital finds the weight percent of their waste streams by having their incinerator operator record the weight of red bag waste and regular waste that went through the incinerator for 3 days. They then estimate the weight percent of each waste type from those figures. To find the heating value of each type of waste the hospital called their incinerator manufacturer who gave them estimates based on a detailed description of their waste stream. The facility fills out the table in Item 10 as follows:

Material	Origin	Weight Percent	Heating Value
Hospital Infectious (red bag) waste and Pathological waste	Central City Hospital	95 %	10,000 Btu/lb
Hospital Waste	Central City Hospital	5 %	4,500 Btu/lb

Form 4530-107 -- Printing Operations

You must fill out one of these forms for each printing operation at your facility. Do not fill out this form for insignificant *emissions units*. See page 2. Be sure the unit identifications and any prefilled information are correct.

Item 5. Listing Control Equipment. Check whether the *emissions unit* is controlled. If it is controlled, figure out which application forms you will need to fill out for this control equipment (4530-110 through -117). List the

control device identification number(s) for this ***emissions unit*** on the blank next to the appropriate form number. For example, enter "C01" in the blank next to "4530-117" for a baghouse. The eight control equipment forms are:

4530-110	Miscellaneous Control Equipment
4530-111	Condensers
4530-112	Adsorbers
4530-113	Catalytic or Thermal Oxidation
4530-114	Cyclones or Settling Chambers
4530-115	Electrostatic Precipitators
4530-116	Wet Collection Systems
4530-117	Baghouses and Fabric Filters

Item 10. Description of inks and solvents. List all inks, fountain solutions, blanket washes (manual or automatic), clean-up and other solvents used in this operation. Characteristics of these inks may be obtained from test data, the supplier, or on Material Safety Data Sheets (MSDS). If the MSDS contains ranges, you should list the higher value. You must attach documentation of the ink and solvent characteristics. Remember to address any Alternate Operating Scenarios, and label any alternative inks as such. Under clean up solvents, include blanket wash or any other clean up solvent used on the same process line. Attach 4530-135 for additional information, where necessary.

For item 10e, note that some MSDS's will report the percent volatiles in the ink rather than the percent **VOC**. Also, if you have Method 24 test data you will receive the percent volatiles in the ink. This number includes water and anything else that will evaporate from an ink sample. If your information gives the percent volatiles, you must subtract the percent water and exempt solvents out before entering the number in item 10e. This is so the equations below to calculate VOC content of the ink will be correct. If you are unsure whether this percentage includes water, call the provider of the MSDS or test data for clarification.

Item 10g asks for either the density of the ink or the density of the **VOC** in the ink. SPECIFY ON THE FORM WHICH NUMBER YOU HAVE PROVIDED. Note that if you give volume percents for water, solids, and VOC content, you must give density of the VOC in the ink. If you give weight percents, the you must provide the density of the ink.

Only screen printing sources must fill out item 10h. There are several ways to calculate VOC content. Depending on what information you have on hand, you may use one of the following equations to calculate the pounds VOC per gallon less water. Please supply sample calculations on form 4530-135.

If you have ink composition data such as weight percents or volume percents of solids, VOC, and water from an MSDS or other source, the following equations can be used:

Ink contains no water or exempt solvents, using weight percents and ink density

$$\text{item 10h} = (10e/100) \times \text{item 10g.}$$

Ink does contain water and/or exempt solvents, using volume percents and the density of the VOC

$$\text{item 10h} = [\text{item 10e} \times \text{item 10g}]/[\text{item 10d} + \text{item 10e}]$$

If you have test data, such as Method 24 results, you can use the following equation. Remember to make sure that the weight percent of VOC in item 10e does not contain water or exempt solvents.

ink does contain water and/or exempt solvents, using weight percents and ink density,

$$\text{item 10h} = [\text{item 10e} \times \text{item 10g}] / [100\% - (\text{item 10f} \times (\text{item 10g} / 8.34))]$$

Example: ABC Printing has a heat-set web-offset line at their printing facility. They operate 24 hr/day, 6 days/wk, and 300 days/yr. According to their press manufacturer, the maximum material throughput is:

Paper: 7200 lb/hr
 Ink: 250 lb/hr
 Fountain Solution: 400 lb/hr
 Blanket wash: 9 lb/hr
 TOTAL: 7859 lb/hr

ABC has MSDS's on file for all the inks they use. The MSDS's provide the weight percent of solids, VOC's, and water in each ink as well as the density of the ink. For item 10h they use the following equation:

$$[48 \times 6.66] / [100\% - (6.0 \times (6.66 / 8.34))] = 3.36 \text{ pounds VOC/gal less H}_2\text{O}$$

ABC fills out item 10 this way:

Name of ink a.	Maximum usage b.		Normal usage c.	Solids % d.		VOC % e.		Water % f.		Coating or VOC Density g.	Pounds VOC/gal less H ₂ O h.
	gal/hr	gal/yr	gal/yr	W	V	W	V	W	V	lbs/gal	
Heatset ink	30	160,000	100,000	46		48		6		6.66	3.36
Total inks	30	160,000	100,000								
Clean up solvents (Blanket wash)	1.3	11,500	9600	0		100		0		6.74	----

Note that ABC has circled the word coating to in item 10g to indicate that they are providing numbers for coating density. If they had used the electronic version of the application forms they would have used form 4530-135, the supplemental information form, to show calculations and clarify which density they used in item 10g.

Form 4530-108 -- Painting and Coating Operations

You must fill out one of these forms for each painting or coating operation at your facility. Do not fill out this form for insignificant *emissions units*. See page 2. Be sure the unit identifications and any prefilled information are correct.

Item 5. Listing Control Equipment. Check whether the *emissions unit* is controlled. If it is controlled, figure out which application forms you will need to fill out for this control equipment (4530-110 through -117). List the control device identification number(s) for this *emissions unit* on the blank next to the appropriate form number. For example, enter "C01" in the blank next to "4530-117" for a baghouse. The eight control equipment forms are:

4530-110

Miscellaneous Control Equipment

4530-111	Condensers
4530-112	Adsorbers
4530-113	Catalytic or Thermal Oxidation
4530-114	Cyclones or Settling Chambers
4530-115	Electrostatic Precipitators
4530-116	Wet Collection Systems
4530-117	Baghouses and Fabric Filters

Item 6. Transfer Efficiency. Transfer efficiency is the percentage of coating solids that adheres to the surface of the material being coated during the application process. Transfer efficiency is, generally, a function of the coating technique. Use manufacturer's literature, accepted industry standards, or test data to estimate your transfer efficiency. Supply manufacturer's literature if appropriate.

Item 10. Description of coatings. List all paints, coatings, and clean-up and other solvents used in this operation. You can find out characteristics of these from test data, your supplier, or Material Safety Data Sheets (MSDS). If the MSDS contains ranges, you should list the higher values. You must attach documentation of the characteristics of each coating. Remember to address any Alternate Operating Scenarios, and label any alternative coatings as such. Attach 4530-135 for additional information.

For item 10g, note that some MSDS's will report the percent volatiles in the coating rather than percent **VOC**. Also, if you have Method 24 test data, you will receive the percent volatiles in the coating. This number includes water and anything else that will evaporate from a coating sample. If your information gives the percent volatiles, you must subtract the percent water and exempt solvents out before entering the number in item 10g. This is so the equations below to calculate VOC content of the coating will be correct. If you are unsure whether this percentage includes water, call the provider of the test data or the MSDS for clarification.

Item 10i asks for either the density of the coating or the density of the **VOC** in the coating. SPECIFY ON THE FORM WHICH NUMBER YOU HAVE PROVIDED. Note that if you give volume percents for water, solids, and VOC content, you must give density of the VOC in the coating. If you give weight percents, the you must provide the density of the coating itself at item 10i.

There are several ways to calculate the **VOC** content required in item 10j. Depending on the information you have on hand, use one of the following equations to calculate the pounds VOC per gallon less water. Please supply sample calculations on form 4530-135.

If you have coating composition data such as weight or volume percents of solids, **VOC**, and water from an MSDS or other source, the following equations can be used:

Coating contains no water or exempt solvents, using weight percents and coating density,

$$\text{item 10j} = (10\text{g}/100) \times \text{item 10i.}$$

Coating does contain water and/or exempt solvents, using volume percents and the density of the VOC,

$$\text{item 10j} = [\text{item 10g} \times \text{item 10i}]/[\text{item 10f} + \text{item 10g}]$$

If you have test data, such as Method 24 results, you can use the following equation. Remember to make sure that the weight percent of VOC in item 10g does not contain water or exempt solvents.

Coating does contain water and/or exempt solvents, using weight percents and coating density,

$$\text{item 10j} = [\text{item 10g} \times \text{item 10i}]/[100\% - (\text{item 10h} \times (\text{item 10i}/8.34))]$$

Example: JB Coating, Inc., manufactures and coats wood jewelry boxes with a clear lacquer and then stamps the names of local tourist traps on the boxes. Petroleum naphtha is used as a cleaner for the stamping portion of the process line. All lacquer is oven-cured. The VOC emissions are controlled by 87% overall. They operate 16 hours/day, 5 days/week, and 200 days/year.

JB gets the weight percents of solids, VOC's, and water, and the coating density from the MSDS sheets on hand for all their coatings. Note that they circle the word "coating" in item 10i to indicate which density they have provided. If they had been using the electronic forms they would have generated a form 4530-135 to describe which density they were providing and to show sample calculations, etc. For item 10j they use the following equation:

$$[65.8 \times 8.5]/[100\% - (34.2 \times (8.5/8.34))] = 8.59 \text{ pounds VOC/gal less H}_2\text{O}$$

JB fills out item 10 this way:

Identify coatings	ct cg	T	Maximum usage		Normal usage	Solids %		VOC %		Water %		Coating or VOC Density	Pounds VOC/gal less H ₂ O
a.	b.	c.	d.		e.	f.		g.		h.		i.	j.
			gal/hr	gal/yr	gal/yr	W	V	W	V	W	V	lbs/gal	
Lacquer	3	250	5	43,800	12,000	0		65.8		34.2		8.5	8.59
Total coatings			5	43,800	12,000								
Clean-up solvents (Petroleum naphtha)			1.0	8760	2200	0		100		0		6.7	6.7

Form 4530-109 -- Miscellaneous Processes

This form should be used if your process will not fit on the other *emissions unit* identification forms. Complete one form for each miscellaneous process at your facility. Do not fill out this form for insignificant *emissions units*.

See page 2. Be sure the unit identifications and any prefilled information are correct.

Item 5. Listing Control Equipment. Check whether the *emissions unit* is controlled or not. If it is controlled, figure out which application forms you will need to fill out for this control equipment (4530-110 through -117). List the appropriate control device identification number(s) for this *emissions unit* on the blank next to the appropriate form number. For example, enter "C01" in the blank next to "4530-117" for a baghouse. The eight control equipment forms are:

4530-110	Miscellaneous Control Equipment
4530-111	Condensers
4530-112	Adsorbers
4530-113	Catalytic or Thermal Oxidation
4530-114	Cyclones or Settling Chambers
4530-115	Electrostatic Precipitators
4530-116	Wet Collection Systems
4530-117	Baghouses and Fabric Filters

Item 9. Process description. Describe the process. Include the types of operations involved, the end product of the process, and how the product is used. Attach a flow diagram of the process, identifying major pieces of equipment, pickup points for dusts, fumes and vapors, control and collection devices, exhaust stacks and vents,

where raw materials will enter the process, and where finished products will exit. Attach diagram and any extra information on form 4530-135.

Item 10. Raw materials table. List all of the raw materials that go into the process, and include the average and maximum amounts of those materials. Remember to address any Alternate Operating Scenarios, and label any alternative materials as such. Indicate any solvents, additives, cleaners, etc. that are used or may be used with this process. Attach Material Safety Data Sheets (MSDS) or other documentation for each substance, if appropriate.

Example: Seesaws, Inc. has a fiberglass spraying operation where they make seats for teeter-totters. They operate 16 hours/day, 5 days/week, and 200 days/yr. Seesaw attaches Material Safety Data Sheets to show the composition of both the fiberglass resin and gelcoat. This is Seesaws' table:

Material	Storage/material handling process	Average usage	Units	Maximum usage	Units
Sprayup vapor suppressing resin	stored in 55 gallon drums, spray hose attached to opening in top of drum for use	27,400	lb/yr	75,000	lb/yr
Sprayup vapor suppressing gel coat	same	2740	lb/yr	7500	lb/yr
Clean-up solvents	acetone, stored in 30 gallon drums, spray hose in top	5,000	lb/yr	10,000	lb/yr

Item 11. Finished products table. List all the finished products. The finished products are important when figuring out what regulations apply to your facility. Remember to address any Alternate Operating Scenarios, and label any alternative finished products as such.

Example: Seesaws, Inc. makes 270 teeter-totter seats per day, each weighing 5 pounds. This is how Seesaws fills out item 11:

Material	Average amount produced	Units	Maximum amount produced	Units
seats for teeter-totters	5400	seats	14,800	seats

Item 12. Process fuel table. List all of the fuels that the process uses or is capable of using. Remember to address any Alternate Operating Scenarios, and label any alternative fuels as such.

Example: Seesaws, Inc. doesn't have any process fuels, so they leave item 12 blank.

Forms 4530-110 through -117 -- Control Equipment

There are eight different control equipment forms. Fill out one form for each piece of control equipment associated with each *emissions unit*, and attach a diagram. In some cases, it will be difficult to use a specific form for your particular control system. For instance if a facility has a painting operation that is controlled by adsorbers, condensers, and a catalytic incinerator, it would be difficult for the facility to convey a clear picture of how their control system works using the separate control equipment forms. In this case the facility would use the miscellaneous control equipment form to describe their system and will attach diagrams. Attach form 4530-135

for any diagrams or additional information. Be sure the unit identifications and any prefilled information are correct. The eight control equipment forms are:

4530-110	Miscellaneous Control Equipment
4530-111	Condensers
4530-112	Adsorbers
4530-113	Catalytic or Thermal Oxidation
4530-114	Cyclones or Settling Chambers
4530-115	Electrostatic Precipitators
4530-116	Wet Collection Systems
4530-117	Baghouses or Fabric Filters

Example: Chem-All, a batch chemical manufacturing plant, uses a cryogenic condensation system to control emissions of **volatile organic compounds** and **hazardous air contaminants** from its tank farm. Chem-All must fill out one form 4530-111 for its condenser. They attach a description of the condenser unit explaining how it works, what it looks like, where it is located, how it is hooked up to the tanks, etc. They also attach a diagram of the device to make the explanation clearer.

Filling Out a Control Equipment Form

Control equipment forms are divided into sections A and B (except the miscellaneous form 4530-110). Fill out section A completely, attaching all required materials. Be sure the unit identifications and any prefilled information are correct.

If in section A you are able to provide a control efficiency for the equipment and you are able to provide a manufacturer's guarantee or stack test results that documents the control efficiency, you do not need to fill out section B. When filling out section B, most of the operating parameters, such as air-to-cloth ratio in a baghouse, can be obtained from the equipment manufacturer. Other parameters will need to have a device installed so that they can be measured. For instance, a flow meter may need to be installed to measure the liquid flow rate through a wet collector.

Item 9. Pollutant table. It is very important to fill out this table accurately because some of the emissions calculations for your facility will be based on the control and capture efficiencies you list. Be sure to attach all your calculations. Your permit may require you to test this piece of equipment and meet a specific control efficiency to show compliance with emission limits.

- **Pollutant.** List all the pollutants this control device is targeting. These would include any **criteria pollutants** (particulate matter, sulfur dioxide, nitrogen oxides, volatile organic compounds, carbon monoxide, and lead) and any regulated **hazardous air contaminants** (see **APPENDIX E**). Sometimes, a pollutant is considered both a criteria pollutant and a hazardous air pollutant. For instance arsenic, a hazardous air pollutant, is emitted as particulate matter. In this case, you should list the pollutant as both a hazardous air pollutant and particulate matter.

Example: Chem-All's tank farm includes 12 storage tanks containing ethanol, propanol, allyl alcohol, and acrylonitrile. All these substances are considered volatile organic compounds. Allyl alcohol, and acrylonitrile are regulated hazardous air pollutants as well. The condenser was installed to control allyl alcohol and acrylonitrile.

In item 9, they list volatile organic compounds, allyl alcohol, and acrylonitrile. Acrylonitrile and allyl alcohol are listed individually because they are regulated hazardous air pollutants as well as volatile organic compounds.

- **Inlet pollutant concentration.** Enter the inlet concentration for each pollutant. Be sure to specify the units. Some commonly used units are grains per actual cubic feet (gr/acf) and parts per million (ppm). You may use other units such as pounds per hour (lb/hr) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), as long as you specify the

units. If your control device targets a **criteria pollutant** that is also a **hazardous air contaminant**, you must include the hazardous air contaminant emissions in the total **criteria pollutant** emissions, and you must also list its emissions separately.

Example: To fill out the inlet concentration for the volatile organic compounds, Chem-All calculates the maximum hourly emissions from each of the 12 storage tanks and adds them all together because they are all volatile organic compounds. Note that ethanol and propanol, although not listed separately, are also included when adding up the total volatile organic compounds emissions from the farm. Chem-All then lists the inlet concentrations for allyl alcohol and acrylonitrile separately because they are also hazardous air pollutants.

<u>Pollutant</u>	<u>Inlet pollutant concentration</u>
Allyl Alcohol	7.2 lb/hr
Acrylonitrile	35.1 lb/hr
Ethanol	325 lb/hr
Propanol	<u>270 lb/hr</u>
Total volatile organic compounds	637.3 lb/hr

- **Hood capture efficiency.** This is the portion of pollutant-laden air that is emitted from the **emissions unit** that actually makes it to the control device. If your facility has duct work that directly connects the emissions unit to the control device with no exhaust escaping, then the capture efficiency is 100 percent. If gases or particulates can bypass the control device, then the capture efficiency is something less than 100 percent. To document capture efficiency, you may use EPA recommendations or other values approved by the Department, as long as the assumptions are clearly stated. You may be required to do testing to get an accurate estimate of capture efficiency.

Example: Chem-All's condenser has a capture efficiency of 100% according to its manufacturer's guarantees. They have included the manufacturer's literature with their application.

- **Outlet pollutant concentration.** Enter the concentration of the pollutant at the outlet of the device. Use the same units that you used for the inlet concentration (e.g., gr/acf, ppm, etc.). To calculate pollutant emission rates, you may use **AP-42** emission factors or other Department-approved emission factors *only if you show your calculations and reference all sources of emission factors*. Attach copies of Material Safety Data Sheets and mass balance calculations if these are involved in the emission estimates. If you use stack testing data you must attach a copy of the stack test report. If the Department already has a copy of the stack test report, you only need to indicate the date the stack test was performed and when you sent in the report.

Example: Chem-All learned its outlet concentrations through stack tests done two years ago. They list this date the test was performed and submit stack test results as part of the application.

- **Efficiency.** Enter the control device efficiency for each pollutant that this device controls. Data entered in this table **MUST BE DOCUMENTED**. Attach the documentation. Acceptable methods of documentation include efficiency guarantees supplied by the control device manufacturer, relevant stack test results, and other means approved by the Department. Either an adequate summary of the report or the dates of the test and when the test results were received by the Department must be included with the application if stack test results are used.

Example: Through stack testing, Chem-All found its control efficiency to be 99%. They attach a summary of the stack test report including the date the test was performed and the date they submitted it to the Department. Here's what their table looks like:

Pollutant	Inlet pollutant concentration	Hood capture efficiency (%)	Outlet pollutant concentration	Efficiency (%)
-----------	-------------------------------	-----------------------------	--------------------------------	----------------

	gr/acf	ppmv		gr/acf	ppmv	
Volatile organic compounds	648 lb/hr		100%	6.47 lb/hr		99%
Allyl Alcohol	7.2 lb/hr		100%	0.07 lb/hr		99%
Acrylonitrile	35.1 lb/hr		100%	0.35lb/hr		99%

Form 4530-118 through -125 - Compliance Demonstration

Forms 4530-118 through 4530-125 cover different methods of compliance demonstration. *Non-part 70 sources* do not have to fill out these forms. If you are a *part 70 source*, you must fill out one form 4530-118 for each *emissions unit* at your facility. In item 5 of this form, you must select the best method(s) of compliance demonstration for the regulated pollutants from that unit. The department is in the process of developing Compliance Demonstration Guidelines. This guidance should be available by March 1, 1994.

Item 6. Compliance certification report schedule and monitoring report schedule. These reports must be submitted during the life of the permit. Certification reports should be submitted no less than once per year, and monitoring reports no less than once every six months. The *Compliance Demonstration Guidelines* should help you decide if you need to submit reports more frequently.

After completing form 4530-118 for the *emissions unit*, fill out the appropriate compliance demonstration forms as follows:

4530-119	Continuous Emission Monitoring
4530-120	Periodic Emission Monitoring using Portable Monitors
4530-121	Monitoring Control System Parameters or Operating Parameters
4530-122	Monitoring Maintenance Procedures
4530-123	Stack Testing
4530-124	Fuel Sampling and Analysis
4530-125	Recordkeeping

Consult the *Compliance Demonstration Guidelines* for help in determining which parameters need to be monitored in order to demonstrate compliance with the regulations.

Form 4530-126 - Emission Unit Hazardous Air Pollutant Summary

For each emission unit you must fill out a separate form for each material used or fuel burned. If for a particular emission unit, many different materials are used, the applicant should consider grouping materials and reporting emissions as the worst case for a particular group of materials. Attach a Material Safety Data Sheet (MSDS) for each material used.

Pollutant CAS. Look up the Chemical Abstract System (CAS) number for each *hazardous air contaminant* in Table 2 of Ch. NR 407, Wis. Adm. Code, which is listed in **APPENDIX E**. Enter the number for each contaminant. IF YOU ARE HAVING TROUBLE FINDING THE RIGHT CAS, THE COMPUTER FORMS WILL GIVE YOU A NUMBER OF WAYS TO TRY TO FIND IT. IF YOU ABSOLUTELY CANNOT FIND THE CAS, FILL IN THE POLLUTANT NAME. There are two cases where a contaminant does not have to be listed. These are described below.

Case 1: When relying on information in an approved MSDS to determine emissions, you do not need to include information on *trace contaminants*. There are two kinds of *trace contaminants*. 1) If a material contains less than 1% of a *hazardous air contaminant*, it is considered a *trace contaminant*. 2) If that hazardous air contaminant is footnoted as a suspected or confirmed human carcinogen, then it is a *trace contaminant* if it makes up less than 0.1% of the material being used. See **APPENDIX M** for a list of suspected and confirmed human

carcinogens.

Case 2: Only facilities that manufacture or process pesticides, rodenticides, insecticides, herbicides or fungicides need to include emissions of contaminants in Table 2 of s. NR 445.04 Wis. Adm. Code.

Actual Emissions. Actual emissions can be found on the annual *air emissions inventory* report for your facility or can be calculated from **AP-42** emissions factors, actual hours of operation and actual yearly consumption of raw materials. Present the information in the same units (i.e., lbs/hr or lbs/yr) as the threshold values in ch. NR 445, Wis. Adm. Code, for a given contaminant. Show and attach calculations on form 4530-135.

Maximum Theoretical Emissions. Calculate the *maximum theoretical emissions* of each *hazardous air contaminant* from this *emissions unit*. Present the information in the same units (i.e., lbs/hr or lbs/yr) as the threshold values in ch. NR 445, Wis. Adm. Code, for a given contaminant. Maximum theoretical emissions is defined and explained, and example calculations are given in **APPENDIX F**. You can also refer to page 2 of this booklet for a further explanation. When calculating maximum theoretical emissions, include any *fugitive emissions* associated with this process.

Potential to Emit. Calculate the *potential to emit* for each *hazardous air contaminant* from this *emissions unit*. Report this information in units of tons per year. *Potential to emit* is defined and explained, and example calculations are given in **APPENDIX G**. When calculating potential to emit, do not include any *fugitive emissions* associated with this process, unless your facility type is listed on page 4 of this booklet.

Example: JB Coating, Inc. manufactures and coats wood jewelry boxes with a clear lacquer and then stamps the names of local tourist attractions on the boxes. They typically use 4.5 gallons of lacquer per hour but are capable of using up to 5.0 gal/hr. Petroleum naphtha is used as a cleaner for the stamping portion of the process line. The VOC emissions are controlled by 87% overall. This limitation is in their new source permit #91-XX-999. The Material Safety Data Sheet (MSDS) for the lacquer lists 8.5 lb/gal as the density. The MSDS also shows that the lacquer is made up of eight compounds and gives the weight percentage of each.

To find the annual emissions of each compound that makes up the lacquer, JB Coating multiplies the hourly usage rate of the lacquer by its density and then by the weight percent of each compound.

Sample calculation using 2-Butoxyethanol (weight % is 49%):

Actual emissions: $4.5 \text{ gal/hr} * 8.5 \text{ lb/gal} * (0.49) * (1-0.87) = 2.4 \text{ lb/hr}$

Maximum theoretical emissions: $[5 \text{ gal/hr} * 8.5 \text{ lb/gal} * (0.49)] = 20.82 \text{ lb/hr}$

Potential to emit: $20.82 \text{ lb/hr} * 24 \text{ hrs/day} * 365 \text{ days/yr} * 1 \text{ ton}/2000 \text{ lb} * (1-0.87) = 11.85 \text{ TPY}$

This table summarizes the weight percentages of each compound, and then the actual emissions of these compounds.

Compounds	CAS #	% by Wt.	Actual
2-Butoxyethanol	111-76-2	49	2.4 lbs/hr
n-Butyl alcohol	71-36-3	10	0.5 lbs/hr
Soybean oil*	8001-22-7	2	
Diethyl phthalate*	117-84-0	1	
Castor oil*	8001-79-4	8	
Stoddard solvent (mineral spirits)	8052-41-3	6	0.3 lbs/hr
Methylisobutyl ketone	108-10-1	19	0.94 lbs/hr
Isopropyl alcohol	67-63-0	4	1.6 lbs/hr
Benzene	71-43-2	0.01-0.09	1.72 lbs/yr

*These compounds are not hazardous air pollutants, so they don't need to be listed on form 4530-126.

JB Coatings lists only 2-butoxyethanol, mineral spirits, 1-methoxy-2-acetoxypropane, and isopropyl alcohol on their 4530-126 form. They do not list benzene because it is a **trace contaminant** -- although it is a confirmed human carcinogen, it makes up less than 0.1% of the lacquer. Here is their table:

Pollutant CAS	Actual		Maximum Theoretical Emissions		Potential to Emit	
		Units		Units		Units
111-76-2	18.7	lb/hr	20.8	lbs/hr	11.85	TPY
80-30-6	2.5	lb/hr	5.2	lbs/hr	2.96	TPY
10215-33-5	7.1	lb/hr	9.4	lbs/hr	5.35	TPY
67-63-0	1.6	lb/hr	4.3	lbs/hr	2.45	TPY

Form 4530-127 - Facility Hazardous Air Pollutant Summary

If you filled out form 4530-126, you must also fill out this form. Be sure the identifications and any prefilled information are correct.

Item 3. For each ***hazardous air contaminant*** listed on the 4530-126 forms, add up the ***maximum theoretical emissions*** from every process and ***emissions unit*** that emits this contaminant. If you are using electronic forms, the emissions of each contaminant on 4530-126 forms will automatically get added up and entered into form 4530-127.

Compare these facility-wide emissions of each ***hazardous air contaminant*** to Table 2 of Ch. NR 407, Wis. Adm. Code, listed in **APPENDIX E**. List every ***hazardous air contaminant*** that is above the inclusion level and enter its total maximum theoretical emissions. At this point, if you find some contaminant emissions are not high enough to be included on this form, you may go back and delete them from form 4530-126. Complete this form by adding up and listing the total actual emissions and ***potential to emit*** for each contaminant from each process.

Example: JB Coating, Inc., described in the example for form 4530-126, has two boilers that burn natural gas in addition to the coating process. The boilers emit formaldehyde, POM, and benzene. The coating process emits benzene and other ***hazardous air contaminants***, as listed in the above example. JB filled out 3 form 4530-126s, one for each emissions unit.

B01's and B02's maximum theoretical emissions of benzene are each 71.6 pounds per year. P01's benzene emissions are considered to be ***trace contaminants*** so are not included (see example for form 4530-126). Because the boilers' benzene emissions are higher than the limits in Appendix L of 30 lb/yr, JB must list this contaminant on form 4530-127. JB adds up the benzene maximum theoretical emissions listed on the 2 form 4530-126s for the boilers and enters the total on the table. Then they add and list the actual and the ***potential to emit*** totals. They follow these same steps for formaldehyde, POM and the other hazardous air contaminants from the coating process. They find that POM is emitted in amounts less than the inclusion level in Appendix L, so they do not include it on form 4530-126 or on this table. Here is their table:

Pollutant CAS	Actual		Maximum theoretical emissions		Potential to emit	
		Units		Units		
71-43-2 (Benzene)	64	lb/yr	143.2	lb/yr	0.0716	TPY
10215-33-5 (1-methoxy-2-acetoxypropane)	7.1	lb/hr	9.4	lb/hr	5.35	TPY
	2.5	lb/hr	5.2	lb/hr	2.96	TPY
67-63-0 (Isopropyl Alcohol)	1.6	lb/hr	4.3	lb/hr	2.45	TPY
111-76-2 (2-Butoxyethanol)	18.7	lb/hr	20.82	lb/hr	11.85	TPY
50-00-0 (formaldehyde)	210	lb/yr	1284	lb/yr	0.642	TPY

Form 4530-128 - Emissions Summary by Emissions Unit

You must fill out one of these forms for each ***emissions unit*** at your facility. Do not fill out this form for insignificant ***emissions units***. Be sure the unit identifications and any prefilled information are correct. Show and attach calculations on form 4530-135.

Air Pollutant. Provide emission levels for each of the listed pollutants that your facility emits.

Actual Emissions. Actual emissions can be found on the annual air emissions inventory report for your facility or can be calculated from **AP-42** emissions factors, actual hours of operation and actual yearly consumption of raw materials. Fill in the actual emissions in the space provided and identify which units you are using by using the code on the bottom of the form. The units you use should correspond with any emission limitation which applies to this pollutant. You must also provide the emissions in tons per year.

Maximum Theoretical Emissions. Calculate the ***maximum theoretical emissions*** of each air pollutant from this ***emissions unit***. ***Maximum theoretical emissions*** is defined and explained, and example calculations are given in **APPENDIX F**. You can also refer to page 2 of this booklet for a further explanation. When calculating

maximum theoretical emissions, include any **fugitive emissions** associated with this process. Fill in the maximum theoretical emissions in the space provided and identify which units you are using by using the code on the bottom of the form. The units you use should correspond with any emission limitation which applies to this pollutant. You must also provide the emissions in tons per year.

Potential to Emit. Calculate the **potential to emit** for each air pollutant from this **emissions unit**. **Potential to emit** is defined and explained, and example calculations are given in **APPENDIX G**. When calculating **potential to emit**, do not include any **fugitive emissions** associated with this process, unless your facility type is listed on page 4 of this booklet. **Potential to emit** should be expressed in tons per year.

Maximum Allowable. Calculate the **maximum allowable** emissions for each air pollutant from this **emissions unit**. Take into account any state or federal emission limits which affect your operation, any previous permits or orders which limit your operation, any pollution control efficiencies, and any equipment limitations. If there are no applicable state or federal emission limits and you have no previous permits or orders, your maximum allowable emissions will be equal to your **potential to emit**. Fill in the **maximum allowable** emissions in the space provided and identify which units you are using by using the code on the bottom of the form. You must also provide the emissions in tons per year.

Example: JB Coating, Inc. uses approximately 12,000 gallons per year of clear lacquer to manufacture and coat wood jewelry boxes stamped with the names of local tourist attractions. About 2,200 gallons per year of petroleum naphtha are used as a cleaner for the stamping portion of the process line. Ch. NR 424, Wis. Adm. Code, requires that JB control organic compound emissions from this process by 85%. JB installed a thermal incinerator that controls VOC emissions by 87% overall in order to meet this regulation. Their normal operating schedule is 16 hours per day, 200 days per year.

JB can spray a maximum of 5 gallons per hour of lacquer. The MSDS for the lacquer shows the following information under Section III-Physical/Chemical Characteristics.

Weight per gallon:	8.5 lb
VOC (% v/v) :	75
VOC (% w/w):	65.8

With this information, they are able to do the following calculations, which they attach on form 4530-135:

Actual emissions:	$12,000 \text{ gal/yr} * 0.658 * 8.5 \text{ lb/gal} * (1-.87) = 8725.1 \text{ lb/yr}$
	$8725.1 \text{ lb/yr} * 1 \text{ yr}/200 \text{ days} * 1 \text{ day}/16 \text{ hrs} = \mathbf{2.73 \text{ lb/hr}}$
	$8725.1 \text{ lb/yr} * 1 \text{ ton}/2000 \text{ lb} = \mathbf{4.36 \text{ TPY}}$

Maximum theoretical:	$5 \text{ gal/hr} * 0.658 * 8.5 \text{ lb/gal} = \mathbf{27.96 \text{ lb/hr}}$
	$27.96 \text{ lb/hr} * 24 \text{ hrs/day} * 365 \text{ days/yr} * 1 \text{ ton}/2000 \text{ lb} = \mathbf{122.48 \text{ TPY}}$

Potential:	$27.96 \text{ lb/hr} * (1-.87) = \mathbf{3.64 \text{ lb/hr}}$
	$3.64 \text{ lb/hr} * 24 \text{ hrs/day} * 365 \text{ days/yr} * 1 \text{ ton}/2000 \text{ lb} = \mathbf{15.92 \text{ TPY}}$

Maximum allowable:	$27.96 \text{ lb/hr} * (1-.85) = \mathbf{4.19 \text{ lb/hr}}$
	$4.19 \text{ lb/hr} * 24 \text{ hrs/day} * 365 \text{ days/yr} * 1 \text{ ton}/2000 \text{ lb} = \mathbf{18.37 \text{ TPY}}$

They estimate a maximum of 1.0 gallons per hour of petroleum naphtha are used. The MSDS for petroleum naphtha shows:

Weight per gallon:	6.7 lb
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VOC (% v/v): 100

With this information, they are able to do the following calculations, which they attach on form 4530-135:

Actual emissions: $2200 \text{ gal/yr} * 1.0 * 6.7 \text{ lb/gal} * (1-.87) = 1916.2 \text{ lb/yr}$
 $1916.2 \text{ lb/yr} * 1 \text{ yr}/200 \text{ days} * 1 \text{ day}/16 \text{ hr} = \mathbf{0.60 \text{ lb/hr}}$
 $1916.2 \text{ lb/yr} * 1 \text{ ton}/2000 \text{ lb} = \mathbf{0.96 \text{ TPY}}$

Maximum theoretical: $1.0 \text{ gal/hr} * 6.7 \text{ lb/gal} = \mathbf{6.7 \text{ lb/hr}}$
 $6.7 \text{ lb/hr} * 24 \text{ hrs/day} * 365 \text{ days/yr} * 1 \text{ ton}/2000 \text{ lb} = \mathbf{29.35 \text{ TPY}}$

Potential: $6.7 \text{ lb/hr} * (1-.87) = \mathbf{0.87 \text{ lb/hr}}$
 $0.87 \text{ lb/hr} * 24 \text{ hrs/day} * 365 \text{ days/yr} * 1 \text{ ton}/2000 \text{ lb} = \mathbf{3.81 \text{ TPY}}$

Maximum allowable: $6.7 \text{ lb/hr} * (1-.85) = \mathbf{1.01 \text{ lb/hr}}$
 $1.01 \text{ lb/hr} * 24 \text{ hrs/day} * 365 \text{ days/yr} * 1 \text{ ton}/2000 \text{ lb} = \mathbf{4.42 \text{ TPY}}$

JB adds together the emissions from the lacquer and the petroleum naphtha because they are both VOCs, and enters them onto form 4530-128 as follows:

Air Pollutant	Actual			Maximum theoretical emissions			Potential to emit			Maximum allowable		
		U	TPY		U	TPY		U	TPY		U	TPY
Organic compounds	3.33	1	5.32	34.66	1	151.83	4.51	1	19.73	5.20	1	22.76

Form 4530-129 - Facility Emissions Summary

You must fill out one of these forms for your facility. Be sure the identifications and any prefilled information are correct.

Air pollutant. For each pollutant listed on the 4530-128 forms, add up the *maximum theoretical emissions* from every process that emits this pollutant. If you are using electronic forms, the emissions of each pollutant on 4530-128 forms will automatically get added up and entered into form 4530-129.

Compare these facility-wide emissions of each pollutant to Table 2 of Ch. NR 407, Wis. Adm. Code, listed in **APPENDIX E**. If the *maximum theoretical emissions* of any pollutant emitted from your entire facility are less than 5 times the level specified in Table 2 you do not need to list that pollutant on this form. At this point, if you find some pollutant emissions are not high enough to be included on this form, you may go back and delete them from form 4530-128. Complete this form by adding up and listing the total actual emissions, *potential to emit* and *maximum allowable* for each pollutant from each process.

Example: JB Coating, Inc., described in the example for form 4530-128, has two boilers in addition to the coating process. All three emit nitrogen oxides and organic compounds. The two boilers also emit particulates. JB filled out 3 form 4530-128s, one for each emissions unit.

B01's and B02's maximum theoretical emissions are each 1 ton per year, P01's are 151.83 tons per year. Because each emissions unit's organic compound emissions are higher than the limits in Appendix L of 2000 lb/yr, JB must list this pollutant on form 4530-129. JB adds up the organic compound maximum theoretical emissions listed on all 3 of the form 4530-128s and enters the total on the table. Then they add and list the actual, the potential to emit, and the maximum allowable totals. They follow these same steps for the particulates and nitrogen oxides. Here is their table:

Air Pollutant	Actual	Maximum theoretical emissions	Potential to emit	Maximum allowable
	TPY	TPY	TPY	TPY
Particulates	0.2	2.2	2.2	2.2
Organic compounds	5.72	153.83	21.73	24.76
Nitrogen oxides	10.2	26	26	26

Form 4530-130 - Current Emissions Requirements and Status of Unit

If you are a *part 70 source*, you must fill out one form for each *emissions unit* at your facility. Do not fill out this form for insignificant *emissions units*. *Non-part 70 sources* do not have to fill out this form. Future renewal applications will contain compliance requirements for *non-part 70 sources*, and they will be required to supply compliance information at that time.

Item 5. Pollutant name. For each *emissions unit* you must list each pollutant you identified on forms 4530-126 and 4530-128 that is regulated on a unit-by-unit basis. You must also list visible emissions and malodorous emissions, if applicable.

Item 6. Wis. Adm. Code, Wis. Stats... You must list every state or federal air pollution regulation affecting each pollutant listed in item 5. You will need to use a copy of the Wisconsin Administrative Code, the Wisconsin Statutes, and the Code of Federal Regulations (title 40). Use any current permits as a guide. You should also check the *Clean Air Act*, and watch the daily Federal Register for new regulations. Where a particular requirement is listed in both the State and the Federal codes, you only need to cite one of the limitations in the permit application. The following outline below is a list of many regulations that may affect your facility.

Item 7. State only. Indicate if the regulation from item 6. is a state only requirement. These are the sections of the Wisconsin Administrative Code that have not yet been approved by the Federal Government. Requirements under ch. NR 445 are state only. Also, any limitation taken to assure compliance with a total suspended particulate (TSP) standard is state only. There may be others. Note that all requirements in your federal operation permit are *federally enforceable* unless they are specifically identified as state only in the permit.

Prevention of Significant Deterioration (PSD) -- Chapter NR 405. This chapter applies to major sources in attainment areas.

Nonattainment Area Major Source Permits -- Chapter NR 408

Particulate Matter Emissions -- Chapter NR 415. Many processes and most fuel burning equipment emit particulate matter. There are also many sources of fugitive dust.

- s. NR 415.04 Fugitive Dust.
- s. NR 415.05 Particulate emission limits for processes
- s. NR 415.06 Particulate matter emission limits for fuel burning installations
- s. NR 415.07 Particulate matter emission limits for incinerators
- s. NR 415.08 RACT requirements for coking operations

Sulfur Emissions -- Chapters NR 417 and NR 418. Fuel burning is a common source of sulfur dioxide emissions along with petroleum refineries and paper mills. Chapter NR 417 covers emissions of both sulfur dioxide (SO₂) and total reduced sulfur. Chapter NR 418 concentrates on reasonably available control technology (RACT) limitations for specific geographic areas in the state. The RACT rules were set up because certain areas were federally designated as SO₂ nonattainment areas. Keep an eye out for rule changes as these areas are slated to be redesignated to attainment status in the future.

Volatile Organic Compound (VOC) Emissions and Applicable Rules -- Chapters NR 419 through NR 425. There are many sources of organic compound emissions. Most of the rules in chs. NR 421, 422, 423 and 424, meet the requirements of EPA for reasonably available control technologies (RACT). The rest of the rules were written to meet other federal requirements.

Chapter NR 419 contains the general limitation on organic compound emissions.

- | | |
|--------------|---|
| s. NR 419.04 | Disposal of VOCs |
| s. NR 419.05 | Storage of VOCs |
| s. NR 419.06 | Transfer of VOCs |
| s. NR 419.07 | Remediation of contaminated soil or water |

Chapter NR 420 covers organic compound emissions from petroleum and gasoline sources.

- | | |
|---------------|--|
| s. NR 420.03 | Storage of petroleum liquids |
| s. NR 420.04 | Transfer operations and associated equipment |
| s. NR 420.045 | Motor vehicle fueling |
| s. NR 420.05 | Petroleum refinery sources |

Chapter NR 421 covers manufacturers of chemicals, coatings, and rubber products.

- | | |
|--------------|--|
| s. NR 421.03 | Pharmaceutical manufacture by chemical synthesis |
| s. NR 421.04 | Pneumatic rubber tire manufacture |
| s. NR 421.05 | Synthetic resin manufacturing |
| s. NR 421.06 | Coatings manufacturing |

Chapter NR 422 covers organic compound emissions from surface coating, printing and asphalt surfacing. These RACT categories are based on the type of manufacturing process. Definitions of what is meant by a certain type of manufacturing can be found under s. NR 422.02.

- | | |
|--------------|---|
| s. NR 422.03 | Exemption levels for the RACT categories |
| s. NR 422.05 | Can coating: applicators and ovens of sheet, can or end coating lines <ul style="list-style-type: none"> □ sheet base coat and overvarnish □ 2 piece can exterior, basecoat and overvarnish □ 2 & 3 pc. can interior body spray □ 2 pc. can exterior end, spray or roll coat □ 3 pc. can side-seam spray & end sealing compounds |
| s. NR 422.06 | Coil coating: applicators, ovens or quench areas <ul style="list-style-type: none"> □ prime and topcoat, or □ single coat. |
| s. NR 422.07 | Paper coating: applicators, including but not limited to blade, air knife or roll coaters, and ovens. |
| s. NR 422.08 | Fabric and vinyl coating: applicators including but not limited to blade, roll, |

rotogravure or dip coaters, and ovens.

- s. NR 422.085 Leather coating
- s. NR 422.09 Auto and light-duty truck manufacturing: application areas, flashoff areas, and ovens
 □ prime, topcoat and repair of metallic front end and main body parts,
 □ NOT coating of wheels, trunk interiors, steering columns, or nonmetallic parts, sealers or non-priming anti-rust coatings.
- s. NR 422.10 Furniture metal: application areas, flashoff areas and ovens
 □ prime and topcoat, or
 □ single coating.
- s. NR 422.11 Large appliances: application areas, flashoff areas and ovens
 □ prime and topcoat, or
 □ single coating,
 □ NOT use of quick-drying lacquers for repair of scratches & nicks from assembly, where volume is less than 1 quart in 8 hour period.
- s. NR 422.12 Magnet wire coating ovens
- s. NR 422.13 Flat wood paneling
 □ printed interior panels of hardwood plywood and thin particleboard, natural finish hardwood plywood panels or hardboard panelling with class II finishes,
 □ NOT exterior siding, tileboard, particleboard used as furniture components.
- s. NR 422.14 Graphic arts
 □ packaging rotogravure
 □ publication rotogravure
 □ flexographic printing
- s. NR 422.15 Miscellaneous metal parts
- s. NR 422.155 Fire truck & emergency response vehicle coating: where meeting limits of miscellaneous metal parts is not technologically or economically feasible, and less than 35 vehicles per day.
- s. NR 422.16 Mixing, storage, use and application of *cutback asphalt* used for surfaces used by motor vehicles, bicycles, and pedestrians.

Chapter NR 423 covers organic compound emissions from solvent cleaning operations such as solvent degreasers.

- s. NR 423.03 Solvent metal cleaning: cold cleaning, open top vapor degreasing and conveyorized vapor degreasing operations
- s. NR 423.04 Perchloroethylene dry cleaning
- s. NR 423.05 Petroleum liquid solvent dry cleaning

Chapter NR 424 covers organic compound emissions from all other process lines as well as some aerosol can filling.

- s. NR 424.03(1) Exemptions
- s. NR 424.03(2) Process lines emitting organic compounds: An emissions unit may be subject to 85% control of organic compound emissions or latest available control techniques and operating practices (LACT) depending on its date of installation or last modification.
- s. NR 424.04 Aerosol can filling

Carbon Monoxide -- Chapter NR 426. Fuel burning is a common source of carbon monoxide emissions. Besides the general limitation, this chapter contains limits for any new cupola requiring incineration of carbon monoxide emissions at 1300° F for 0.3 seconds. In this case, new means any cupola which was constructed or modified after April 1, 1972

Lead -- Chapter 427

Nitrogen Oxide Emissions -- Chapter NR 428. At present, all *emissions units* that emit nitrogen oxides (NOx) are only covered by the general limitations in s. NR 428.03, Wis. Adm. Code. That will change quite a bit in 1994. Reasonably available control technology (RACT) rules for NOx emissions being drafted for the following emissions units:

1. Utility Boilers,
2. Industrial, Commercial and Institutional Boilers,
3. Reciprocating Internal Combustion Engines,
4. Gas Turbines,
5. Glass Manufacturing Furnaces,
6. Lime Manufacturing Furnaces, or
7. any other combustion process that is a *major source* of NOx emissions and not specifically listed above.

Malodorous Emissions -- Chapter NR 429. Most facilities are subject to this rule. It is generally applied to a facility as a whole but could be applied on an emissions unit basis.

Visible Emissions -- Chapter NR 431. Most processes will have a visible emissions limitation. Limitations on opacity will vary from emissions unit to emissions unit depending on the date of installation or last modification of the unit.

New Source Performance Standards (NSPS) -- Chapter NR 440. These standards currently apply to 67 different manufacturing classifications (more are being developed). For each *emissions unit* at your facility you should look through the table of contents at the beginning of chapter NR 440 to see if it is listed. Each section of this chapter will define the applicability criteria, which usually depends on the date of construction or last modification. If you find that an *emissions unit* at your facility has an NSPS and it meets the applicability criteria, then carefully read each section to see what special requirements apply to your *emissions unit*.

Hazardous air contaminants -- Chapter NR 445. This chapter covers *hazardous air contaminants*. It contains four tables listing *hazardous air contaminants* and emission rates called "threshold values" that trigger specific requirements for the contaminants. Contaminants in tables 1, 2, and 4 are regulated based on a facility wide, pound per hour, *potential to emit*. Table 3 contaminants are regulated based on facility wide, pound per year, actual emissions. When total facility, actual emissions of a contaminant listed in table 3 are over the threshold value, a facility must apply best available control technology (BACT) or lowest achievable emission rate (LAER) to the *emissions unit* at the plant that emits that contaminant at the highest rate. If controlling emissions from this unit does not bring the facility-wide total of the hazardous contaminant emissions down below the threshold value, then BACT or LAER must be applied to other units until either the emission rate is below that threshold value or until all the units are covered. Therefore, although total facility hazardous emissions are necessary to determine

what regulations apply, the application of those regulations will be on a unit-by-unit basis. NOTE: IF YOU LIST BACT OR LAER AS A LIMITATION ON FORM 4530-130 OR -132, YOU MUST PROPOSE WHAT BACT OR LAER IS. Use form 4530-135, the supplemental information form, for this purpose.

s. NR 445.04 Emissions limits and exceptions for sources which constructed or modified after October 1, 1988.

s. NR 445.05 Emission limits and exceptions for sources whose date of construction or last modification was before October 1, 1988.

Mercury Emissions -- Chapter NR 446

Asbestos Emissions -- Chapter NR 447

Beryllium Emissions -- Chapter NR 448

Vinyl Chloride -- Chapter NR 449

Statutes 144.30 to 144.426 Wis. Stats. (subchapter III) You should cite the Statutes when you want to take an emission limit that is more stringent than required, or if you are taking an emission limit to protect the National Ambient Air Quality Standards.

Code of Federal Regulations (title 40). The following areas of the federal code may affect your facility.

The Clean Air Act

Section 112, hazardous air pollutants

Section 111, new source performance standards

Title I, part C, prevention of significant deterioration

Title I, part D, nonattainment areas

Parts 50 to 99

Part 52, state implementation plan requirements

Part 60, new source performance standards

Part 61, national emissions standards for hazardous air pollutants (NESHAPs)

Part 70, permits

Parts 72-78, acid rain

Example: Home Interiors, Etc. coats natural finish hardwood plywood panels for home interiors. Process P01 is a clear coat spray application line which was last modified in 1984. Home Interiors uses its 1984 permit to help figure out what the applicable limitations are for this line and sees that particulate matter from overspray, visibles, and organic compounds are all emitted from this line. A few calculations are performed to ensure that operating conditions haven't changed since issuance of the old permit. In 1984 Home Interiors had been exempt from any special organic compound limitations. Now they find that, due to an increase in business in recent years, actual emissions of organic compounds have surpassed the exemption levels in s. NR 422.03, Wis. Adm. Code. This process line is now subject to the reasonably available control technology rules (RACT) found in ch. NR 422.13(2)(b), Wis. Adm. Code. Home Interiors, Etc., fills out form 4530-130 this way.

P01, S01 - clear lacquer spray coating

5. Pollutant	6. Wis. Adm. Code Wis. Stat. 40 CFR	7. State Only	8. Limitation	9. Compliance Status (in or out)
Particulates	ss. NR 415.05(1)(o) and 415.05(2)		The most restrictive of: 1) 0.4 pounds per 1000 pounds of exhaust gas; 2) $E = 3.59P^{0.62}$ applies for process weight rates < 60000 pounds per hour, $E = 17.31P^{0.16}$ applies for process weight rates ≥ 60000 pounds per hour where E is the allowable emission rate in pounds per hour and P is the process weight rate in tons per hour.	in
Visible Emissions	s. NR 431.05		20% opacity	in
Organic compounds	s. NR 422.13(2)(b)		12lb VOC /1000ft ² of coated finished product	out
10. Other requirements		State Only		Compliance Status (in or out)
Malfunction reporting s. NR 439.03		*		in

Form 4530-131 - Emissions Unit Compliance Plan - Commitments and Schedule

If you are a **part 70 source**, you must certify compliance for every significant **emissions unit** at your facility. If the **emissions unit** is in compliance you need to only fill out items 1- 4. If the unit is not presently in compliance you should check the box in item 6 and give a schedule of how and when you will attain compliance. FILLING OUT THE COMPLIANCE SCHEDULE DOES NOT PROTECT YOU FROM ACTION BY THE U.S. EPA OR CITIZEN SUITS.

Non-part 70 sources do not have to fill out this form. Future renewal applications will contain compliance requirements for **non-part 70 sources**, and they will be required to supply compliance information at that time.

Example: Home Interiors, Etc., has an **emissions unit** that does not meet the requirements of s. NR 422.13, Wis. Adm. Code: the lacquer coating must meet 12 lb VOC/1000 sq ft of coated finished product. All the rest of their facility is in compliance, but they must come up with a compliance schedule for meeting this requirement. They submit a complete application on October 1, 1994. Here is what their schedule looks like:

Non-complying requirement	Corrective Actions	Deadline
1. s. NR 422.13(b), Wis. Adm. Code	Work with suppliers of the lacquer and our customers to find a coating that will meet the requirements and still provide a satisfactory product. Otherwise install equivalent control measure.	April 1, 1996
	Receive reformulated coating from supplier and begin sending out new product to customers.	April 1, 1995
	Update from customers as to quality of product over time. If necessary, change formulation of coating to improve quality and get customer approval for final product.	October 1, 1995
	If reformulation does not work, install equivalent control for organic compound emissions. Control $\geq 40\%$ would be needed to achieve a decrease from 20 lb/1000 sq ft to 12 lb/1000 sq ft.	April 1, 1996

Progress Reports: Start Date: October 1, 1994 and every 6 months thereafter.

Form 4530-132 - Current Emissions Requirements and Status of Facility

If you are a **part 70 source**, you must fill out this form if you have any facility-wide emission limitations. **Non-part 70 sources** do not have to fill out this form. Future renewal applications will contain compliance requirements for **non-part 70 sources**, and they will be required to supply compliance information at that time.

Item 3. Pollutant name. You must list each pollutant you identified on forms 4530-127 and 4530-129 that is regulated on a facility-wide basis.

Item 4. Wis. Adm. Code, Wis. Stats... List any facility-wide requirements that are applicable to the source. Such requirements include existing permit requirements, such as restrictions on the total number of hours a plant may operate, total solvent usage, and so on. You will need to use a copy of the Wisconsin Administrative Code, the Wisconsin Statutes, and the Code of Federal Regulations (title 40). Use any current permits as a guide. You should also check the *Clean Air Act*, and watch the daily Federal Register for new regulations. Where a particular requirement is listed in a number of the above documents, only one needs to be listed (see the instructions for form 4530-130). See the outline of regulations listed in the instructions for form 4530-130.

Item 5. State only. Indicate if the regulation from item 6. is a state only requirement. These are the sections of the Wisconsin Administrative Code that have not yet been approved by the Federal Government. Requirements under ch. NR 445 are state only. Also, any limitation taken to assure compliance with a total suspended particulate (TSP) standard is state only. There may be others. Note that all requirements in your federal operation permit are **federally enforceable** unless they are specifically identified as state only in the permit.

Item 6. Threshold value. List the threshold value only for contaminants listed in Tables 1-4 of ch. NR 445, Wis. Adm. Code. Threshold values for contaminants listed in tables 1, 2 and 4, depend on stack height and are expressed in pounds per hour. Threshold values for table 3 contaminants are expressed in pounds per year.

Item 8. 112(r)(7). Check the appropriate box. If your facility is or will be subject to section 112(r)(7) of the

Clean Air Act, please list the pollutants that your facility emits that are regulated by this provision, and describe how you will comply with the provisions.

Example: See the above example for form 4530-130 using Home Interiors, Etc. Home interiors, Etc., must identify emission limits which effect their entire facility. From their form 4530-127 they find that only 2-butoxyethanol has emissions above the reporting requirements from the table in ch. NR 407, Wis. Adm. Code. The maximum uncontrolled emissions of 2-Butoxyethanol = 20.8 lb/hr. (See example for form 4530-126 for calculating maximum uncontrolled emissions for a hazardous air contaminant.) The facility will also be subject to malodorous emission limits.

3. Pollutant	4. Wis. Adm. Code Wis. Stat. 40 CFR	5. State Only	6. Threshold Value	7. Compliance Status (in or out)
2-Butoxyethanol	s. NR 445.05(4)	*	41.952 lb/hr (stack > 25 ft.)	in (below the threshold value)
9. Other requirements		State Only	Compliance Status (in or out)	
Malodorous Emissions	NR 429.03(1)	*	in	

Form 4530-133 - Facility Requirement Compliance Plan Commitments and Schedule

If you are a **part 70 source**, you must certify compliance with requirements that affect the entire facility. If the facility is in compliance, you need to fill out only items 1- 3. If the facility is not presently in compliance you should check the box in item 4 and give a schedule of how and when you will attain compliance. Fill the schedule out in a manner similar to the example given for form 4530-131. FILLING OUT THE COMPLIANCE SCHEDULE DOES NOT PROTECT YOU FROM ACTION BY THE U.S. EPA OR CITIZEN SUITS.

Non-part 70 sources do not have to fill out this form. Future renewal applications will contain compliance requirements for **non-part 70 sources**, and they will be required to supply compliance information at that time.

Form 4530-134 - Index of Air Pollution Permit Application Forms

After you have finished filling out your permit application, use form 4530-134 as a checklist. Check off the box for each form that you have completed. If applicable, indicate how many of each form you completed.

Example: KLH & Co. has three emissions units (2 boilers and 1 miscellaneous process), each venting from a separate stack. The boilers each use a baghouse for controlling emissions, which include hazardous pollutants. KLH is a part 70 source, so they must complete compliance certification forms. They plan to monitor control system parameters for their boiler baghouses and to keep records on a daily basis for the other process. They checked the following boxes on form 4530-134 and listed the number of each form they completed:

Forms

☐ 4530-100
☒ 4530-101
☒ 4530-102

Total number of this form:

<input type="checkbox"/>	4530-103	3
<input checked="" type="checkbox"/>	4530-104	2
<input checked="" type="checkbox"/>	4530-109	1
<input checked="" type="checkbox"/>		
<input type="checkbox"/>	4530-117	2
<input checked="" type="checkbox"/>		
<input type="checkbox"/>	4530-118	3
<input checked="" type="checkbox"/>	4530-121	2
<input checked="" type="checkbox"/>	4530-125	1
<input checked="" type="checkbox"/>		
<input type="checkbox"/>	4530-126	2
<input checked="" type="checkbox"/>	4530-127	1
<input checked="" type="checkbox"/>	4530-128	3
<input checked="" type="checkbox"/>	4530-129	1
<input checked="" type="checkbox"/>	4530-130	3
<input checked="" type="checkbox"/>	4530-131	3
<input checked="" type="checkbox"/>	4530-132	1
<input checked="" type="checkbox"/>	4530-133	1
<input checked="" type="checkbox"/>		

VI. Signature. The *responsible official* of your facility must sign this form or the application will not be complete. If you are using electronic forms, you must print out a copy of this page, sign it and return it with your diskette. ***Non-part 70 sources*** do not have to certify their compliance, and therefore do not need to check a box in question B, but they must still sign this form to show completeness. Future renewal applications will contain compliance requirements for ***non-part 70 sources*** and they will be required to sign and certify compliance and completeness at that time.

Form 4530-135 - Supplemental Information

It is very important that you label this form properly so the permit reviewer knows which form it is supplementing. Be sure to enter a form number as well as an item number. For instance, if you need extra room to describe the operations served by your storage tank T17. You must enter in item 3, "4530-105" and for ***emissions unit***, "T17." Then enter "item 21" in the table and supply the extra information.

This form may be used in many different ways. It is designed to provide flexibility. Use this form to provide any additional information that will give the Department a clear picture of the operations at your facility.

APPENDIX A

DEFINITIONS

APPENDIX A DEFINITIONS

Affected Source:

A stationary source that includes one or more emissions units that are subject to an emissions reduction requirement or emissions limitation under the acid rain program." (NR 400.02 (1q), Wis. Admin. Code)

Air Contaminant:

has the meaning given in s. 144.30(1), Stats. "Air contaminant" means dust, fumes, mist, liquid, smoke, other particulate matter, vapor, gas, odorous substances or any combination thereof but shall not include uncombined water vapor. (NR 400.02 (2), Wis. Adm Code)

Air Emission Inventory:

This annual reporting is required by NR 438, Wis. Admin. Code. Facilities that actually emit at levels greater than the reporting levels in NR 438, must file an annual air emission inventory. If the same sources need to apply for an operation permit, they will be assessed fees on their emissions.

Ambient Air Increment:

The maximum allowable increase in concentration of an air contaminant above the baseline concentration of the air contaminant. The baseline concentration is the ambient concentration level which exists in the baseline area at the time of the applicable baseline date. This concentration is determined by the Department for each air contaminant for which a baseline date is established. (See Ch. NR 405, Wis. Adm. Code on Prevention of Significant Deterioration.)

Ambient Air Standard:

The specified levels of air quality which are necessary to protect the public health and welfare. These standards include primary standards which are set to protect the public health, and secondary standards which are set to protect the public welfare. The Federal government sets the air standards and periodically reviews them.

Applicable Requirements:

means all of the following as they apply to ***emissions units*** at a source, including requirements that have been promulgated or approved by EPA or the department through rulemaking at the time of permit issuance but for which compliance is required after the date of permit issuance:

- (a) Any standard or other requirement provided for in the applicable implementation plan approved or promulgated by EPA through rulemaking in 40 CFR part 52;
- (b) Any term or condition of any construction permit issued pursuant to ch. NR 405, 406 or 408 or to regulations approved or promulgated by EPA through rulemaking under title I of the act (42 USC 7401 to 7415);
- (c) Any standard or other requirement under section 111 of the act (42 USC 7411);
- (d) Any standard or other requirement under section 112 of the act (42 USC 7412);
- (e) Any standard or other requirement of the acid rain program;
- (f) Any requirements established pursuant to section 504(b) or section 114(a)(3) of the act (42 USC 7661c(b) or 7414(a)(3));
- (g) Any standard or other requirement governing solid waste incineration, under section 129 of the act (42 USC 7429);
- (h) Any standard or other requirement for consumer and commercial products, under section 183(e) of the act (42 USC 7511b(e));
- (i) Any standard or other requirement for tank vessels, under section 183(f) of the act (42 USC 7511b(f));
- (j) Any standard or other requirement of the regulations promulgated to protect stratospheric ozone under title VI of the act (42 USC 7671 to 7671q), unless the administrator has determined that the requirements need not be contained in an operation permit;
- (k) Any national ambient air quality standard or increment or visibility requirement under part C of title I of the act (42 USC 7470 to 7492); and
- (l) Any emission limit or other requirement in ss. 144.30 to 144.426, Stats. or chs. NR 400 to 499.
- (m) Any source-specific emission limitation established pursuant to ss. 144.30 to 144.426, Stats., or rules promulgated thereunder.

Clean Air Act:

The Clean Air Act amendments of 1990 represent the fifth major effort by Congress to address clean air legislation. The first Clean Air Act was passed in 1967 and provided authority to establish air quality standards. The Clean Air Act of 1970 was more comprehensive, laying the foundation for regulatory efforts. It was again modified in 1974 and 1977. the 1990 Clean Air Act amendments cover air toxics, acid rain, operation permits, non-attainment areas, stratospheric ozone depletion, auto standards/clean fuels, and enforcement.

Combined Total Tankage Capacity:

Add up the maximum capacity of all tanks at your facility and compare this total to the exemption levels listed in NR 406 or NR 407, Wis. Admin. Code.

Comprehensive Environmental Response Compensation and Liability Act (CERCLA):

This is the Federal law that created the Superfund Program. This program deals with clean-ups of any spills of hazardous materials.

Criteria Pollutant:

The criteria pollutants are: particulate matter, sulfur dioxide, nitrogen oxides, organic compounds, carbon monoxide, and lead.

Emissions Unit:

Any part of a stationary source which emits or is capable of emitting any air contaminant. (NR 400.02(35), Wis. Admin. Code) "Basic emissions unit" means the smallest collection of equipment which in combination emits or is capable of emitting any air contaminant. (NR 400.02(17m), Wis. Admin. Code)

Federally Enforceable:

A condition in a permit is Federally Enforceable if it is contained in a federally enforceable permit. See appendix K for details on what makes a permit condition federally enforceable.

Fugitive Emissions:

An emission from any emission point within a facility other than a flue or stack. (NR 400.02(42), Wis. Admin. Code) Be aware when fugitive emissions are included in the calculation of maximum theoretical emissions and potential to emit and when these emissions are not included.

General Operation Permit

An operation permit that can be issued to certain types of facilities, process lines or emissions units that the Department has identified as having similar operations, air contaminant emissions and air contaminant control systems.

Hazardous Air Contaminant:

Any air contaminant for which no ambient air quality standard is set in ch. NR 404 and which the department determines may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness, or may pose a significant threat to human health or the environment. The term hazardous air contaminant includes, but is not limited to, the substances listed in Tables 1 to 4 in s. NR 445.04. (NR 400.02(6), Wis. Admin. Code)

Hazardous Air Pollutant:

Any pollutant listed in Sec. 112 of the Clean Air Act. These pollutants are listed in **APPENDIX I**.

Indirect Source:

Any stationary source which conveys motor vehicles or which attracts or may attract mobile source activity and thus indirectly causes the emission of any air contaminant. Such indirect sources include, but are not limited to highways and roads; parking facilities; retail, commercial and industrial facilities; recreation, amusement, sports and entertainment facilities; airports; office and government buildings; and educational facilities. (NR 400.02 (47), Wis. Admin. Code)

Major Source:

See **APPENDIX H** for determining if your facility is a major source.

Maximum Allowable Emissions:

The maximum emissions allowed by permit.

Maximum Theoretical Emissions:

The quantity of air contaminants that theoretically could be emitted by a stationary source without control devices based on the design capacity or maximum production capacity of the source. When determining annual maximum theoretical emissions, a source shall be presumed to operate 8,760 hours per year unless its physical design precludes 8,760 hours of operation per year. Where a source's physical design restricts the number of hours it may operate, annual maximum theoretical emissions shall be calculated taking this restriction into account. In determining the maximum theoretical emissions of VOCs for a source, the design capacity or maximum production capacity shall include the use of raw materials, coatings and inks with the highest VOC content used in practice by the source. Realistic operating conditions shall be taken into account in determining emissions under this subsection. (NR 400.02 (53m), Wis. Admin. Code) Also see **APPENDIX F**.

Metropolitan County:

means a county which has been designated as either a metropolitan statistical area or a primary metropolitan statistical area be the U.S. department of commerce in Federal Information Processing Standards Publication 8-5, October 31, 1984, incorporated by reference in ch. NR 484, Wis. Adm. Code.

Modification:

Any physical change in, or change in the method of operation of, a stationary source that increases the amount of emissions of an air contaminant or that results in the emission of an air contaminant not previously emitted. A modification does not include any changes identified in s. NR 406.04(4).

New Source Performance Standards (NSPS):

A listing of the sources affected by these regulations can be found in **APPENDIX K**. Any source that is subject to an NSPS becomes a ***part 70 source***. (s. NR 440, Wis. Admin. Code)

Non-Part 70 Source:

Any source which is required to obtain an air pollution operation permit and is not a ***part 70 source***.

Part 70 Source:

Includes any ***major source***, any electric utility affected by the acid rain provisions of the Clean Air Act, and any solid waste incineration unit which has a maximum capacity greater than or equal to 250 tons per day.

Potential to Emit:

The maximum capacity of a stationary source to emit any air contaminant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air contaminant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is enforceable by the administrator. Also see **APPENDIX G**.

Prevention of Significant Deterioration (PSD):

This is the Federal new source review (construction permit) program for large new stationary sources. Wisconsin has been delegated the authority to operate this program in the state. Any source that is subject to PSD is considered a Part-70 source for an operation permit. (s. NR 405, Wis. Admin. Code)

Rated Capacity:

To determine rated capacity, an owner or operator may need to contact the equipment supplier or investigate any literature on specific processes. In looking at rated capacity, the Department is looking for the maximum continuous operations. If your process (such as an electric generation turbine) has instantaneous operating capacity that could only be maintained for short periods of time, this should be noted on your application and the more accurate maximum continuous rated capacity should be used for emissions calculations.

Reactive Organic Gas (ROG):

Another name for volatile organic compounds -- specifically the compounds that participate in ground-level ozone formation.

Responsible Official:

- A. For a corporation, one of the following:
 - 1. A president, secretary, treasurer or vice president of the corporation in charge of a principal business function.
 - 2. Any other person who performs similar policy or decision-making functions for the corporation.
 - 3. A duly authorized representative of a person listed in 1 or 2 above if the representative is responsible for the overall operation of one or more manufacturing, production or operating facilities applying for or subject to a permit and the representative is approved in advance by the Department.
- B. For a partnership or sole proprietorship, a general partner or the proprietor.
- C. For a municipality, or a state, federal or other public agency, either a principal executive officer or ranking elected official. For the purposes of this paragraph, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency, for example, a regional administrator of EPA.
- D. Or, a designated representative as defined in 40 CFR 72.20107225 pertaining only to acid rain sources.

Significant Emission Rate (PSD):

Once you are a major source under the PSD program (see NR 405, Wis. Admin. Code), any net emissions increase modifications to your facility would be considered major and need to undergo PSD review if they exceed the significant emission rates. The significant emission rates are listed in NR 405.02 (27)(a), Wis. Admin. Code.

Stationary Source:

has the meaning given in s. 144.30(23), Stats. (NR 400.02 (96) Wis. Admin. Code). (23) "Stationary source" means any facility, building, structure or installation that directly or indirectly emits or may emit an air contaminant only from a fixed location. A stationary source includes an air contaminant source that is capable of being transported to a different location.

A stationary source may consist of one or more pieces of process equipment, each of which is capable of emitting an air contaminant. A stationary source does not include a motor vehicle or equipment which is capable of emitting an air contaminant while moving.

Suspected or Confirmed Human Carcinogen:

Carcinogens are cancer-causing substances. The difference between suspected and known human carcinogens are the background studies that have been performed. If a substance has been directly linked to cancer in humans, it becomes a confirmed human carcinogen. If animal test studies indicate there is a cancer potential in humans, it is listed as a suspected human carcinogen.

Synthetic Minor, Non-Part 70 Source:

A source that takes legally enforceable restrictions on their operations to avoid becoming a major source, thus avoiding permitting as a *part 70 source* or a PSD source.

Table 1, 2, 3, or 4 of NR 445, Wis. Admin. Code:

These tables list out the hazardous air contaminants regulated by the State of Wisconsin. Tables 1 and 4 contain the acute hazardous substances, table 2 contains pesticides and table 3 has the known and suspected human carcinogens. The table values associated with each contaminant are the emission levels above which sources would need to apply for a permit or submit a compliance plan.

Trace Contaminants:

For the purpose of looking for hazardous air contaminants, if the material is only present as a trace contaminant it can be ignored. Trace contaminant is a contaminant listed on a material safety data sheet which constitutes less than 1% of the material being used or 0.1% of the material being used if the air contaminant is footnoted as a suspected or confirmed human carcinogen by the American Conference of Governmental Industrial Hygienists in the 1990-1991 Threshold Limit Value for Chemical Substances and Physical Agents and Biological Exposure Indices.

Trade Secret:

If you feel that some information that needs to be submitted is considered a trade secret, you can apply for confidentiality status under the petition rights in NR 2, Wis. Admin. Code.

Volatile Organic Compound (VOC):

Any organic compound which participates in atmospheric photochemical reactions. (NR 400.02 (100), Wis. Admin. Code) This includes any such organic compound other than the following compounds, which have been determined to have negligible photochemical reactivity:

- (a) Methane,
- (b) Ethane,
- (c) Methylene chloride (Dichloromethane),
- (d) 1,1,1-Trichloroethane (Methyl chloroform),
- (e) Trichlorofluoromethane (CFC-11),
- (f) Dichlorodifluoromethane (CFC-12),
- (g) Chlorodifluoromethane (CFC-22),
- (h) Trifluoromethane (FC-23),
- (i) 1,1,1-Trichloro-2,2,2-trifluoroethane (CFC-113),
- (j) 1,2-Dichloro-1,1,2,2-tetrafluoroethane (CFC-114),
- (k) Chloropentafluoroethane (CFC-115),
- (l) 1,1,1-Trifluoro-2,2-dichloroethane (HCFC-123),
- (m) 2-Chloro-1,1,1,2-tetrafluoroethane (HCFC-124),
- (n) Pentafluoroethane (HFC-125),
- (o) 1,1,2,2-Tetrafluoroethane (HFC-134),

- (p) 1,1,1,2-Tetrafluoroethane (HFC-134a),
- (q) 1,1-Dichloro-1-fluoroethane (HCFC-141b),
- (r) 1-Chloro-1,1-difluoroethane (HCFC-142b),
- (s) 1,1,1-Trifluoroethane (HFC-143a),
- (t) 1,1-Difluoroethane (HFC-152a), and
- (u) Perfluorocarbon compounds which fall into the following classes:
 - 1. Cyclic, branched or linear completely fluorinated alkanes,
 - 2. Cyclic, branched or linear completely fluorinated ethers with no unsaturations,
 - 3. Cyclic, branched or linear completely fluorinated tertiary amines with no unsaturations, and
 - 4. Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

Note: The test methods used to measure VOC are specified in s. NR 439.06(3).

Wisconsin Administrative Code (Wis. Admin. Code):

A compendium of the regulations of the state. The Air Pollution Control regulations are found in NR 400 through NR 499, Wis. Admin. Code.

Wisconsin Statutes (Stats.):

Wisconsin statutes give the Department the authority to develop rules to meet the requirements of the statutory directives. Air pollution statutes are in section 144.

APPENDIX C

CATEGORIES OF EXEMPT SOURCES

APPENDIX C

CATEGORIES OF EXEMPT SOURCES

I. Specific Categories of Exempt Sources. You are not required to submit a permit application if your facility consists solely of one of the following air pollution sources:

1. External combustion furnaces that do not burn any hazardous waste identified under ch. NR 605, *Wis. Adm. Code* or which have been issued a license under ch. NR 680, Wis. Adm. Code, and which are designed at a combined total capacity to burn the following fuels at the maximum rates indicated:
 - a. Coal, coke or other solid fuels, except wood, at a heat input rate of not more than 1.0 million BTU per hour;
 - b. Wood alone or wood in combination with gaseous or liquid fuels at a heat input rate of not more than 5.0 million BTU per hour;
 - c. Residual or crude oil at a heat input rate of not more than 5.0 million BTU per hour;
 - d. Distillate oil at a heat input rate of not more than 10 million BTU per hour; and
 - e. Gaseous fuel at a heat input rate of not more than 40 million BTU per hour.
2. Equipment designed to incinerate solid wastes that are not pathological wastes, infectious wastes, municipal wastes or hazardous wastes under ch. NR 605, Wis. Adm. Code, at a rate of not more than 500 pounds per hour.
3. Equipment that is designed to dry grain at a rate of not more than 1,500 bushels per hour at a 5% moisture extraction and which is not subject to s. NR 440.47, Wis. Adm. Code.
4. Portland concrete batch plants that produce less than 20,000 cubic yards of concrete per month averaged over any 12 consecutive month period.
5. Storage tanks containing organic compounds with a true vapor pressure in pounds per square inch absolute at 70°F of less than 1.52 with a ***combined total tankage capacity*** of not more than 40,000 gallons.
6. ***Volatile organic compound (VOC)*** storage tanks with a ***combined total tankage capacity*** of not more than 10,000 gallons of volatile organic compounds.
7. Painting or coating operations, including associated quality assurance laboratories and cleaning operations which emit or will emit not more than 1,666 pounds of organic compounds per month, which are measured prior to entering and emission control devices.
8. Graphic arts operation, including associated quality assurance laboratories and cleaning operation which emit or will emit not more than 1,666 pounds of organic compounds per month, which are measured prior to entering any emission control device.
9. Cold cleaning equipment with a total air to solvent interface of 1.0 square meters or less during operation.
10. Open top vapor degreasing equipment with a total air to vapor interface of 1.0 square meters or less during operation.
11. Dry cleaning operations with a total maximum operating capacity for all machines of 75 pounds of clothes per hour.
12. Private alcohol fuel production systems as defined in s. 144.438(1)(c), *Stats.*
13. Crematories.
14. Indirect malt dryers which are designed to burn fuels specified in par. 1 (above) at a heat input rate less than the

rates specified in par. 1. (above).

15. A laboratory which emits organic compounds, sulfur dioxide, carbon monoxide, nitrogen oxides or particulate matter or a combination thereof at a rate of less than 5.7 pounds per hour unless the emissions of any single ***hazardous air pollutant*** as defined by sec. 112(b) of the act (42 USC) 7412(b)¹ equals or exceeds 10 tons per year or the cumulative emissions of all the hazardous air pollutants equals or exceeds 25 tons per year. Hourly emissions shall be determine, based on the quantitative estimate of air contaminants before they enter any emission control devices, by dividing the total uncontrolled emissions which would have occurred during a calendar month by the total hours of operation of the laboratory during that calendar month. A laboratory is in operation if laboratory apparatus or equipment is in use.
16. Equipment the primary purpose of which is to transport or sort paper.
17. Facilities for chlorination of municipal drinking water, the intake of once through industrial process or cooling water, or water for swimming pools, spas or other recreational establishments.
18. Gasoline dispensing facilities which dispense gasoline or other petroleum products.
19. Bulk gasoline plants which distribute gasoline or other petroleum products and which have an average daily throughput of less than 15,000 liters (4,000 gallons), based on a 30-day rolling average.
20. The following procedures for the remediation of soil or water contaminated with organic compounds:
 - a. Landspreading, aeration or bioremediation or contaminated soil;
 - b. Negative pressure venting of contaminated soil, provided the remediation is completed within 18 months or total organic compounds are emitted at a rate of not more than 5.7 pounds per hour, considering emission control devices;
 - c. Pilot tests of negative pressure venting systems provided those tests are completed within 8 hours of startup and the air flow rate during the pilot test does not exceed 100 standard cubic feet per minute;
 - d. Landfilling of contaminated soil;
 - e. Application of biodegradation techniques to contaminated soil;
 - f. Installation and use of devices which remove organic compounds from a private or municipal potable water supply;
 - g. Installation and use of crop irrigation systems or dewatering wells to remediate contaminated water;
 - h. Installation and use of air strippers for treatment of contaminated water, provided the remediation is completed within 18 months;
 - i. Installation and use of any device or technique not listed in this paragraph which are used to remediate soil or water contaminated with organic compounds, if the device or technique is not portable and is not a thermal evaporation unit, and the remediation is completed within 18 months; and
 - j. Installation and use of any technique or device to remediate soil or water contaminated with organic compounds as part of on-site actions taken under the authority of the comprehensive environmental response compensation and liability act of 1980, as amended, 42 USC 9601 et seq.

Note: Even though these sources are exempt from permit requirements, they are still subject to the approval requirements under s. NR 419.07(2), Wis. Adm. Code.

21. Renovation or demolition operation involving friable asbestos containing material.
22. A combination of ***emissions units*** which consists of not more than one each of the following specific categories of sources:
 - a. Fuel burning equipment otherwise exempt under par. 1. (above);
 - b. Equipment designed to incinerate solid wastes otherwise exempt under par. 2. (above);
 - c. Storage tanks of organic compounds with a combined total tankage capacity of not more than 40,000 gallons if not more than 10,000 gallons of the storage tanks' capacity is used for storage of volatile organic compounds; and

- d. Only one of the other specific category exemptions listed in pars. 3., 4., and 7. through 19.
23. Emergency electric generators powered by internal combustion engines which are fueled by gaseous fuels, gasoline or distillate fuel oil with an electrical output of less than 3,000 kilowatts.
24. **INDIRECT SOURCES.** You do not need to submit a permit application if your facility consists solely of one of the following *indirect sources* of air pollution:
- Existing sources. All indirect sources on which construction or modification commenced on or prior to November 15, 1992.
 - Road and highway projects. All indirect sources which are road or highway projects.
 - Indirect sources with associated parking. If the indirect source will not be a road or highway project, an operation permit is required if the source will be:
 - An indirect source located in a *metropolitan county* with a parking capacity of less than 1000 cars in its associated parking areas.
 - An indirect source located in a *metropolitan county* with a parking capacity increase of less than 1000 cars in its associated parking areas.
 - An indirect source located outside the *metropolitan counties* with a parking capacity of less than 1500 cars in its associated parking areas.
 - An indirect source located outside the *metropolitan counties* with a parking capacity increase of less than 1500 cars in its associated parking areas.

Note: In order to be eligible for a specific exemption under sub. 4., 7., 8., 15., 19. or 20., the owner or operator shall keep and maintain records of materials used, emissions or production rates, whichever is appropriate, that are adequate to demonstrate that the source qualifies for the exemption. The owner or operator shall begin keeping these records no later than January 1, 1994 or the date that the source commences operation, whichever is later, and maintain them for a minimum of 5 years. After January 1, 1994, any air pollution source that ever exceeds any level listed in sub. 4., 7., 8., 15., 19. or 20. is not eligible for the exemption under that subsection. If you anticipate that your facility will exceed these exemption levels listed, you must apply for a permit prior to exceeding the specified level.

II. General Categories of Exempt Sources You are not required to submit a permit application if your facility meets all of the following criteria:

- The *maximum theoretical emissions* (see **APPENDIX F**) from the entire facility for sulfur dioxide or carbon monoxide do not exceed 9.0 pounds per hour for each *air contaminant*;
- The *maximum theoretical emissions* from the entire facility for particulate matter, nitrogen oxides or organic compounds do not exceed 5.7 pounds per hour for each *air contaminant*;
- The *maximum theoretical emissions* from the entire facility for lead do not exceed 5.7 pounds per hour.
- The entire facility will not emit any of the air contaminants listed in s. NR 405.02(27)(a), Wis. Adm. Code at a rate greater than the applicable emission rate listed in s. NR 405.02(27)(a), Wis. Adm. Code.
- The entire facility will not emit any *hazardous air contaminant* listed in Table 1, 2, 3 or 4 of s. NR 445.04, Wis. Adm. Code in amounts greater than the emission rate listed in Table 1, 2, 3 or 4 of s. NR 445.04, Wis. Adm. Code for the air contaminant for the respective stack height.
- The entire facility will not have *maximum theoretical emissions* of any single *hazardous air pollutant* as defined by section 112(b) of the act (42 USC 7412(b)) that equal or exceed 10 tons per year or cumulative *maximum theoretical emissions* of all hazardous air pollutants defined by section 112(b) of the act (42 USC 7412(b)) that equal or exceed 25 tons per year (See **APPENDIX I**).

APPENDIX D

RESOURCE MATERIALS

APPENDIX D RESOURCE MATERIALS

The following sources may be useful in filling out permit application forms.

The Small Business Assistance Program

If you have fewer than 100 employees at your facility, you can call the Small Business Assistance Program to help you determine if you need a permit or to provide general assistance with the forms. Call the Department of Development Small Business Hotline at 1-800-HELP-BUS or (608) 266-9869.

Chapters NR 400 to 499 of the Wisconsin Administrative Code

The complete Code is distributed to the county law libraries; to the libraries of the University of Wisconsin Law School and Marquette University Law School; to the State Historical Society; to the Legislative Reference Bureau and to the State Law Library, and to certain designated public libraries throughout the state.

The complete Code or appropriate sections can be purchased from:

The Department of Administration
Document Sales and Distribution
P.O. Box 7840
Madison, WI 53707
phone: (608) 266-3358

Sections 144.30 to 144.426 of the Wisconsin Statutes - Wisconsin Natural Resources Laws, Environmental Protection, PUBL-LC-002.

The appropriate sections of the Wisconsin Statutes can be purchased at the address listed above.

The Clean Air Act and Federal Air Program Regulations (40 CFR Part 50-99)

Can be purchased from:

Superintendents of Documents
U.S. Government Printing Office
Mail Stop SSOP
Washington D.C. 20402-9328
phone: (202) 783-3238

Other sources of information would include **existing permits and orders** that have been issued to the facility and the preliminary determinations for those permits, the *Air Emission Inventory*, and the Department's files regarding your facility.

Text books

Handbook of Chemistry and Physics, published by the CRC Press, Inc.

The Chemical Engineers' Handbook, published by the McGraw-Hill Book Company

Sources of emission factors for determining your facility's air pollution emissions:

Compilation of Air Pollutant Emission Factors, Publication Number: AP-42 The United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

AIRS Facility Subsystem Source Classification Codes and Emission Factor Listing For Criteria Air Pollutants, Document Number: EPA 450/4-90-003 The United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

Toxics Air Pollutant Emission Factors - A Compilation for Selected Air Toxic Compounds and Sources, Document
Number: EPA 450/2-88-006a The United States Environmental Protection Agency, Office of Air Quality Planning and
Standards, Research Triangle Park, NC 27711.

The above publications can be obtained for a fee from:

The National Technical Information Services
5285 Port Royal Road
Springfield, Virginia 22161
Phone: (703) 487-4807

APPENDIX E

AIR CONTAMINANT INCLUSION LEVELS

APPENDIX E

AIR CONTAMINANT INCLUSION LEVELS

Table 2, Ch. NR 407, Wis. Adm. Code (in CAS number order)

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
*	Chlorinated dioxins and furans (total equivalents)	4	0.00001
*	Coke oven emissions	2, 3	2.5
*	Fine mineral fibers (includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less)	2	2,000.0
*	Fluorides, (inorganics), as F	3	182.9
*	Glycol ethers ⁸	2	2,000.0
*	Group A Pharmaceuticals (a total of all air contaminants listed as Group A Pharmaceuticals)	3	2.5**
*	Group B Pharmaceuticals (a total of all air contaminants listed as Group B Pharmaceuticals)	3	25**
*	Hydrochlorofluorocarbon-121 (HCFC-121)	5	2,000.0
*	Hydrochlorofluorocarbon-122 (HCFC-122)	5	2,000.0
*	Hydrochlorofluorocarbon-131 (HCFC-131)	5	2,000.0
*	Hydrochlorofluorocarbon-221 (HCFC-221)	5	2,000.0
*	Hydrochlorofluorocarbon-222 (HCFC-222)	5	2,000.0
*	Hydrochlorofluorocarbon-223 (HCFC-223)	5	2,000.0
*	Hydrochlorofluorocarbon-224 (HCFC-224)	5	2,000.0
*	Hydrochlorofluorocarbon-226 (HCFC-226)	5	2,000.0
*	Hydrochlorofluorocarbon-231 (HCFC-231)	5	2,000.0
*	Hydrochlorofluorocarbon-232 (HCFC-232)	5	2,000.0
*	Hydrochlorofluorocarbon-233 (HCFC-233)	5	2,000.0
*	Hydrochlorofluorocarbon-234 (HCFC-234)	5	2,000.0
*	Hydrochlorofluorocarbon-235 (HCFC-235)	5	2,000.0
*	Hydrochlorofluorocarbon-241 (HCFC-241)	5	2,000.0
*	Hydrochlorofluorocarbon-242 (HCFC-242)	5	2,000.0

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
* Hydrochlorofluorocarbon-243 (HCFC-243)		5	2,000.0
* Hydrochlorofluorocarbon-244 (HCFC-244)		5	2,000.0
* Hydrochlorofluorocarbon-251 (HCFC-251)		5	2,000.0
* Hydrochlorofluorocarbon-252 (HCFC-252)		5	2,000.0
* Hydrochlorofluorocarbon-253 (HCFC-253)		5	2,000.0
* Hydrochlorofluorocarbon-261 (HCFC-261)		5	2,000.0
* Hydrochlorofluorocarbon-262 (HCFC-262)		5	2,000.0
* Hydrochlorofluorocarbon-271 (HCFC-271)		5	2,000.0
* Iron salts, soluble, as Fe		3	73.6
* Nitrogen oxides		1, 4	2,000.0
* Nitrosoamines (a total of all air contaminants listed as Nitrosoamines)		3	25**
* Particulate matter		4	2,000.0
* PM ₁₀		1, 4	2,000.0
* Polycyclic Organic Matter (a total of all air contaminants listed as Polycyclic Organic Matter)		2, 3	25**
* Total reduced sulfur and reduced sulfur compounds		2	2,000.0
* Volatile organic compounds (Reactive organic gases)		1	2,000.0
50-00-0 Formaldehyde		2, 3	25.0
50-18-0 Cyclophosphamide		3	Group A Pharmaceutical
50-28-2 Oestradiol		3	Group B Pharmaceutical
50-32-8 Benzo(a)pyrene		3	Polycyclic Organic Matter
50-55-5 Reserpine		3	Group B Pharmaceutical
51-28-5 2,4-Dinitrophenol		2	2,000.0
51-52-5 Propylthiouracil		3	Group B Pharmaceutical
51-75-2 Nitrogen mustards (2,2'-Dichloro-N-methyldiethylamine)		3	Group B Pharmaceutical

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
51-79-6	Urethane (Ethyl carbamate)	2, 3	25.0
52-24-4	Tris(1-aziridinyl)phosphine sulfide	3	Group B Pharmaceu- tical
53-70-3	Dibenz(a,h)anthracene	2, 3	Polycyclic Organic Matter
53-96-3	2-Acetylaminofluorene	2	2,000.0
55-18-5	N-Nitrosodiethylamine	3	Nitrosoamine
55-38-9	Fenthion	3, 6	14.5
55-98-1	1,4-Butanediol dimethanesulphonate (Myleran)	3	Group A Pharmaceu- tical
56-23-5	Carbon tetrachloride	2, 3, 5	2.5
56-38-2	Parathion	2, 3, 6	7.4
56-53-1	Diethylstilbestrol (DES)	3	Group A Pharmaceu- tical
56-55-3	Benz(a)anthracene	3	Polycyclic Organic Matter
57-14-7	1,1-Dimethylhydrazine	2, 3	25.0
57-24-9	Strychnine	3, 6	10.9
57-41-0*	Phenytoin and sodium salt of phenytoin	3	Group B Pharmaceu- tical
57-57-8	beta-Propiolactone	2, 3	25.0
57-74-9	Chlordane	2, 3, 6	35.7
58-89-9*	Lindane and other hexachlorocyclohexane isomers	2, 3	2.5
59-89-2	N-Nitrosomorpholine	2, 3	Nitrosoamine
60-11-7	4-Dimethylaminoazobenzene	2, 3	25.0
60-34-4	Methyl hydrazine	2, 3	67.3
60-35-5	Acetamide	2	2,000.0
60-57-1	Dieldrin	3, 6	18.3
61-82-5	Amitrole	3, 6	14.5
62-53-3	Aniline	2, 3	729.5
62-56-6	Thiourea	3	25.0
62-73-7	Dichlorvos	2, 3, 6	73.6

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
62-74-8	Sodium fluoroacetate	3, 6	3.6
62-75-9	N-Nitrosodimethylamine	2, 3	Nitrosoamine
63-25-2	Carbaryl	2, 3, 6	365.8
64-19-7	Acetic acid	3	1,825
64-67-5	Diethyl sulfate	2, 3	2.5
67-56-1	Methanol	2	2,000.0
67-66-3	Chloroform	2, 3	25.0
67-72-1	Hexachloroethane	2	2,000.0
68-12-2	N,N-Dimethylformamide	2, 3	2,000.0
71-36-3	n-Butyl alcohol	3	2,000.0
71-43-2	Benzene	2, 3	30.0
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)	2	2,000.0
72-20-8	Endrin	3, 6	7.4
72-33-3	Mestranol	3	Group B Pharmaceuti- cal
72-43-5	Methoxychlor	2	2,000.0
74-83-9	Methyl bromide	2, 3, 6	1,459.1
74-87-3	Methyl chloride	2, 3	2,000.0
74-88-4	Methyl iodide	2, 3	25.0
74-89-5	Methylamine	3	874.6
74-90-8	Hydrogen cyanide	2, 3	443.6
75-00-3	Ethyl chloride (Chloroethane)	2	2,000.0
75-01-4	Vinyl chloride	2, 3	30.0
75-04-7	Ethylamine (Ethanamine)	3	1,314.0
75-05-8	Acetonitrile	2, 3	2,000.0
75-07-0	Acetaldehyde	2, 3	2,000
75-09-2	Methylene chloride	2, 3	2,000.0
75-15-0	Carbon disulfide	2, 3	2,000.0

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
75-21-8	Ethylene oxide	2, 3	2.5
75-25-2	Bromoform	2	2,000.0
75-31-0	Isopropylamine	3	874.6
75-34-3	1,1-Dichloroethane	2, 3	2,000.0
75-35-4	Vinylidene chloride	2, 3	1,459.1
75-43-4	Hydrochlorofluorocarbon-21 (HCFC-21)	5	2,000.0
75-44-5	Phosgene	2, 3	29.4
75-45-6	Hydrochlorofluorocarbon-22 (HCFC-22, R-22)	5	2,000.0
75-52-5	Nitromethane	3	2,000.0
75-55-8	Propylenimine	2, 3	25.0
75-56-9	Propylene oxide	2, 3	25.0
75-63-8	Halon-1301	5	2,000.0
75-68-3	Hydrochlorofluorocarbon-142b (HCFC-142b, R-142b)	5	2,000.0
75-69-4	Chlorofluorocarbon-11 (CFC-11, R-11)	5	2,000.0
75-71-8	Chlorofluorocarbon-12 (CFC-12, R-12)	5	2,000.0
75-72-9	Chlorofluorocarbon-13 (CFC-13, R-13)	5	2,000.0
75-88-7	Hydrochlorofluorocarbon-133a (HCFC-133a)	5	2,000.0
75-99-0	2,2-Dichloropropionic acid	3, 6	437.3
76-06-2	Chloropicrin (Trichloronitromethane)	3, 6	50.5
76-12-0	Chlorofluorocarbon-112 (CFC-112)	5	2,000.0
76-13-1	Chlorofluorocarbon-113 (CFC-113)	5	2,000.0
76-14-2	Chlorofluorocarbon-114 (CFC-114, R-114)	5	2,000.0
76-15-3	Chlorofluorocarbon-115 (CFC-115, R-115)	5	2,000.0
76-22-2	Camphor (synthetic)	3	874.6
76-44-8	Heptachlor	2, 3, 6	35.7
77-47-4	Hexachlorocyclopentadiene	2, 3, 6	7.4
77-73-6	Dicyclopentadiene	3	2,000.0
77-78-1	Dimethyl sulfate	2, 3	2.5

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
78-10-4	Ethyl silicate	3	2,000.0
78-30-8	Triorthocresyl phosphate	3	7.4
78-34-2	Dioxathion	3, 6	14.5
78-59-1	Isophorone	2, 3	1,110.1
78-83-1	Isobutyl alcohol	3	2,000.0
78-87-5	Propylene dichloride	2, 3	2,000.0
78-93-3	Methyl ethyl ketone (2-Butanone) (MEK)	2	2,000.0
79-00-5	1,1,2-Trichloroethane	2, 3	2,000.0
79-01-6	Trichloroethylene	2, 3	2,000.0
79-06-1	Acrylamide	2, 3	21.0
79-10-7	Acrylic acid	2, 3	2,000.0
79-11-8	Chloroacetic acid	2	2,000.0
79-24-3	Nitroethane	3	2,000.0
79-34-5	1,1,2,2-Tetrachloroethane	2, 3	510.9
79-41-4	Methacrylic acid	3	2,000.0
79-44-7	Dimethyl carbamoyl chloride	2, 3	25.0
79-46-9	2-Nitropropane	2, 3	25.0
80-62-6	Methyl methacrylate	2, 3	2,000.0
81-81-2	Warfarin	3, 6	7.4
82-68-8	Pentachloronitrobenzene (Quintobenzene) (PCNB)	2	2,000.0
83-26-1	Pindone	3, 6	7.4
83-79-4	Rotenone (commercial)	3, 6	365.8
84-66-2	Diethyl phthalate	3	365.8
84-74-2	Dibutyl phthalate	2, 3, 6	365.8
85-00-7*	Diquat	3, 6	35.7
85-44-9	Phthalic anhydride	2, 3	437.3
86-50-0	Azinphos-methyl	3, 6	14.5
86-88-4	ANTU	3, 6	21.0

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
87-68-3	Hexachlorobutadiene	2, 3, 6	9.2
87-86-5	Pentachlorophenol	2, 3	35.7
88-06-2	2,4,6-Trichlorophenol	2	2,000.0
89-72-5	o-sec-Butylphenol	3	2,000.0
90-04-0*	o-Anisidine and o-anisidine hydrochloride	2, 3	25.0
91-20-3	Naphthalene	2, 3	2,000.0
91-22-5	Quinoline	2	2,000.0
91-59-8	2-Naphthylamine	3	2.5
91-94-1	3,3'-Dichlorobenzidine	2, 3	25.0
92-52-4	Biphenyl	2, 3	109.3
92-67-1	4-Aminobiphenyl	2, 3	2.5
92-84-2	Phenothiazine	3, 6	365.8
92-87-5	Benzidine	2, 3	0.2
92-93-3	4-Nitrobiphenyl	2	2,000.0
94-36-0	Benzoyl peroxide	3	365.8
94-75-7	2,4-D, salts and esters	2	2,000.0
95-47-6	o-Xylene	2, 3	2,000.0
95-48-7	o-Cresol	2	2,000.0
95-49-8	o-Chlorotoluene	3	2,000.0
95-50-1	o-Dichlorobenzene	3	2,000.0
95-53-4	o-Toluidine	2, 3	2.5
95-80-7*	2,4-Diaminotoluene	2, 3	25.0
95-95-4	2,4,5-Trichlorophenol	2	2,000.0
96-09-3	Styrene oxide	2	2,000.0
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	2, 3	25.0
96-18-4	1,2,3-Trichloropropane	3	2,000.0
96-33-3	Methyl acrylate	3	2,000.0
96-45-7	Ethylene thiourea	2, 3	25.0

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
98-00-0	Furfuryl alcohol	3	2,000.0
98-01-1	Furfural	3	584.5
98-07-7	Benzotrichloride	2, 3	25.0
98-51-1	p-tert-Butyltoluene	3	2,000.0
98-82-8	Cumene	2, 3	2,000.0
98-83-9	alpha-Methyl styrene	3	2,000.0
98-86-2	Acetophenone	2	2,000.0
98-95-3	Nitrobenzene	2, 3	365.8
99-08-1*	Nitrotoluene, all isomers	3	803.1
100-00-5	p-Nitrochlorobenzene	3	46.6
100-01-6	p-Nitroaniline	3	218.6
100-02-7	4-Nitrophenol	2	2,000.0
100-37-8	2-Diethylaminoethanol	3	2,000.0
100-41-4	Ethyl benzene	2, 3	2,000.0
100-42-5	Styrene, monomer	2, 3	2,000.0
100-44-7	Benzyl chloride	2, 3	365.8
100-61-8	N-Methyl aniline	3	145.1
100-63-0	Phenylhydrazine	3	766.1
100-74-3	N-Ethylmorpholine	3	1,677.7
100-75-4	N-Nitrosopiperidine	3	Nitrosoamine
101-14-4	4,4'-Methylene bis(2-chloroaniline) (MOCA)	2, 3	25.0
101-68-8	Methylene bisphenyl isocyanate (MDI)	2, 3	8.8
101-77-9*	4,4'-Methylenedianiline (and dihydrochloride)	2, 3	25.0
101-84-8	Phenyl ether vapor	3	510.9
102-81-8	2-N-Dibutylaminoethanol	3	1,022
105-60-2	Caprolactam vapor	2, 3	1,459.1
106-35-4	Ethyl butyl ketone	3	2,000.0
106-42-3	p-Xylene	2, 3	2,000.0
106-44-5	p-Cresol	2	2,000.0

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
106-46-7	p-Dichlorobenzene	2, 3	2,000
106-50-3	p-Phenylenediamine	2, 3	7.4
106-51-4	Quinone	2, 3, 6	29.4
106-87-6	Vinyl cyclohexene dioxide	3	1,314.0
106-88-7	1,2-Epoxybutane (1,2-Butylene oxide)	2	2,000.0
106-89-8	Epichlorohydrin	2, 3	30.0
106-93-4	1,2-Dibromoethane (EDB)	2, 3	25.0
106-99-0	1,3-Butadiene	2, 3	2,000.0
107-02-8	Acrolein	2, 3	18.3
107-05-1	Allyl chloride	2, 3	218.6
107-06-2	1,2-Dichloroethane (EDC)	2, 3	2.5
107-07-3	Ethylene chlorohydrin	3	132.5
107-13-1	Acrylonitrile	2, 3	2.5
107-15-3	Ethylenediamine	3	1,824.9
107-18-6	Allyl alcohol	3	365.8
107-19-7	Propargyl alcohol	3	145.1
107-21-1	Ethylene glycol vapor	2, 3	2,000.0
107-30-2	Chloromethyl methyl ether (CMME)	2, 3	0.01
107-31-3	Methyl formate	3	2,000.0
107-41-5	Hexylene glycol	3	2,000.0
107-49-3	TEPP	3, 6	3.6
108-05-4	Vinyl acetate	2, 3	2,000.0
108-10-1	Methyl isobutyl ketone	2, 3	2,000.0
108-11-2	Methyl isobutyl carbinol	3	2,000.0
108-18-9	Diisopropylamine	3	1,459
108-24-7	Acetic anhydride	3	887
108-31-6	Maleic anhydride	2, 3	73.6
108-38-3	m-Xylene	2, 3	2,000.0

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
108-39-4	m-Cresol	2	2,000.0
108-44-1	m-Toluidine	3	656
108-46-3	Resorcinol	3	2,000.0
108-83-8	Diisobutyl ketone	3	2,000.0
108-84-9	sec-Hexyl acetate	3	2,000.0
108-88-3	Toluene (Toluol)	2, 3	2,000.0
108-90-7	Chlorobenzene (Monochlorobenzene)	2, 3	2,000.0
108-91-8	Cyclohexylamine	3	2,000.0
108-93-0	Cyclohexanol	3	2,000.0
108-94-1	Cyclohexanone	3	2,000.0
108-95-2	Phenol	2, 3	1,385
108-98-5	Phenyl mercaptan	3	145.1
109-59-1	Isopropoxyethanol	3	2,000.0
109-73-9	n-Butylamine	3	666.46
109-86-4	2-Methoxyethanol (EGME)	3	1,166.8
109-89-7	Diethylamine	3	2,000.0
109-99-9	Tetrahydrofuran	3	2,000.0
110-12-3	Methyl isoamyl ketone	3	2,000.0
110-43-0	Methyl n-amyl ketone	3	2,000.0
110-49-6	2-Methoxyethyl acetate (EGMEA)	3	1,751.3
110-54-3	n-Hexane	2, 3	2,000.0
110-62-3	n-Valeraldehyde	3	2,000.0
110-80-5	2-Ethoxyethanol (EGEE)	3	655.9
110-86-1	Pyridine	3	1,095.4
110-91-8	Morpholine	3	2,000.0
111-15-9	2-Ethoxyethyl acetate (EGEEA)	3	1,969.9
111-40-0	Diethylene triamine	3	292.2
111-42-2	Diethanolamine	2, 3	1,095
111-44-4	Dichloroethyl ether	2, 3	2,000.0

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
111-76-2	2-Butoxyethanol (EGBE)	3	2,000.0
114-26-1	Propoxur	2, 3, 6	35.7
115-29-7	Endosulfan	3, 6	7.4
115-86-6	Triphenyl phosphate	3	218.6
115-90-2	Fensulfothion	3, 6	7.4
117-79-3	2-Aminoanthraquinone	3	25.0
117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	2, 3	25.0
118-52-5	1,3-Dichloro-5,5-dimethyl hydantoin	3	14.5
118-74-1	Hexachlorobenzene (HCB)	2, 3	2.5
119-90-4	3,3'-Dimethoxybenzidine (o-Dianisidine)	2, 3	25.0
119-93-7	3,3'-Dimethylbenzidine (o-Tolidine)	2, 3	25.0
120-71-8	p-Cresidine	3	25.0
120-80-9	Catechol (Pyrocatechol)	2, 3	1,459
120-82-1	1,2,4-Trichlorobenzene	2, 3	1,774.4
121-44-8	Triethylamine	2	2,000.0
121-69-7	Dimethylaniline (N,N-Dimethylaniline)	2, 3	1,825
122-60-1	Phenyl glycidyl ether (PGE)	3	437.3
122-66-7	Hydrazobenzene	2, 3	25.0
123-31-9	Hydroquinone	2, 3	145.1
123-38-6	Propionaldehyde	2	2,000.0
123-42-2	Diacetone alcohol	3	2,000.0
123-73-9*	Crotonaldehyde	3	588.7
123-91-1	1,4-Dioxane	2, 3	25.0
124-40-3	Dimethylamine	3	1,314
124-73-2	Halon-2402	5	2,000.0
126-73-8	Tributyl phosphate	3	182.9
126-98-7	Methylacrylonitrile	3	218.6
126-99-8	beta-Chloroprene	2, 3	2,000.0

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
127-18-4	Perchloroethylene	2, 3	2,000.0
127-19-5	Dimethyl acetamide	3	2,000.0
131-11-3	Dimethylphthalate	2, 3	365.8
132-64-9	Dibenzofurans	2	2,000.0
133-06-2	Captan	2, 3, 6	365.8
133-90-4	Chloramben	2	2,000.0
136-40-3*	Phenazopyridine and phenazopyridine hydrochloride	3	Group B Pharmaceutical
137-05-3	Methyl 2-cyanoacrylate	3	584.5
137-26-8	Thiram	3, 6	365.8
138-22-7	n-Butyl lactate	3	1,824.9
140-88-5	Ethyl acrylate	2, 3	1,459.1
141-32-2	n-Butyl acrylate	3	2,000.0
141-43-5	Ethanolamine	3	584.5
141-66-2	Dicrotophos	3, 6	18.3
141-79-7	Mesityl oxide	3	2,000.0
143-33-9*	Cyanides, (inorganics), as CN	2, 3	365.8
144-62-7	Oxalic acid	3	73.6
148-82-3	Melphalan	3	Group A Pharmaceutical
150-76-5	4-Methoxyphenol	3	365.8
151-56-4	Ethylenimine	2, 3	73.6
154-93-8	Bischloroethyl nitrosourea	3	Group B Pharmaceutical
156-10-5	p-Nitrosodiphenylamine	3	Nitrosoamine
156-62-7	Calcium cyanamide	2, 3	35.7
189-55-9	Dibenzo(a,i)pyrene	2, 3	Polycyclic Organic Matter
189-64-0	Dibenzo(a,h)pyrene	2, 3	Polycyclic Organic Matter
193-39-5	Indeno(1,2,3-cd)pyrene	2, 3	Polycyclic Organic Matter
194-59-2	7H-Dibenzo(c,g)carbazole	2, 3	Polycyclic Organic Matter

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
205-99-2	Benzo(b)fluoranthene	2, 3	Polycyclic Organic Matter
224-42-0	Dibenz(a,i)acridine	2, 3	Polycyclic Organic Matter
226-36-8	Dibenz(a,h)acridine	2, 3	Polycyclic Organic Matter
298-00-0	Methyl parathion	3, 6	14.5
298-02-2	Phorate	3, 6	3.6
298-04-4	Disulfoton	3, 6	7.4
299-86-5	Crufomate	3, 6	365.8
300-76-5	Naled	3, 6	218.6
302-01-2*	Hydrazine and hydrazine sulfate	2, 3	25.0
305-03-3	Chlorambucil	3	Group A Pharmaceuti- cal
306-83-2*	Hydrochlorofluorocarbon-123 (HCFC-123, R-123)	5	2,000.0
309-00-2	Aldrin	3, 6	18.3
314-40-9	Bromacil	3, 6	729.5
333-41-5	Diazinon	3, 6	7.4
334-88-3	Diazomethane	2, 3	29.4
353-50-4	Carbonyl fluoride	3	365.8
353-59-3	Halon-1211	5	2,000.0
366-70-1*	Procarbazine and procarbazine hydrochloride	3	Group B Pharmaceuti- cal
420-04-2	Cyanamide	3	145.1
422-56-0	Hydrochlorofluorocarbon-225ca (HCFC-225ca)	5	2,000.0
422-78-6	Chlorofluorocarbon-211 (CFC-211, R-211)	5	2,000.0
422-86-6	Chlorofluorocarbon-217 (CFC-217, R-217)	5	2,000.0
434-07-1	Oxymetholone	3	Group B Pharmaceuti- cal
446-86-6	Azathioprine	3	Group A Pharmaceuti- cal
460-19-5	Cyanogen	3	1,459.1
463-51-4	Ketene	3	65.2
463-58-1	Carbonyl sulfide	2	2,000.0

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
494-03-1	N,N-Bis (2-chloroethyl)-2-naphthylamine (Chloronaphazine)	3	Group A Pharmaceutical
505-60-2	Mustard gas	3	Group A Pharmaceutical
506-77-4	Cyanogen chloride	3	27.3
507-55-1	Hydrochlorofluorocarbon-225cb (HCFC-225cb)	5	2,000.0
510-15-6	Chlorobenzilate	2	2,000.0
528-29-0*	Dinitrobenzene, all isomers	3	73.6
532-27-4	2-Chloroacetophenone	2	2,000.0
534-52-1	Dinitro-o-cresol	2, 3, 6	14.5
540-59-0	1,2-Dichloroethylene	3	2,000.0
540-84-1	2,2,4-Trimethylpentane	2	2,000.0
541-85-5	Ethyl amyl ketone	3	2,000.0
542-75-6	Dichloropropene	2, 3, 6	365.8
542-88-1	Bis(chloromethyl) ether (BCME) and technical grade	2, 3	0.01
542-92-7	Cyclopentadiene	3	2,000.0
552-30-7	Trimellitic anhydride	3	2.9
556-52-5	Glycidol	3	2,000.0
558-13-4	Carbon tetrabromide	3	103.0
563-12-2	Ethion	3, 6	29.4
583-60-8	o-Methylcyclohexanone	3	2,000.0
584-84-9	Toluene-2,4-diisocyanate (TDI)	2, 3	2.9
591-78-6	Methyl n-butyl ketone	3	1,459.1
593-60-2	Vinyl bromide	2	2,000.0
593-70-4	Hydrochlorofluorocarbon-31 (HCFC-31)	5	2,000.0
594-42-3	Perchloromethyl mercaptan	3	58.9
594-72-9	1,1-Dichloro-1-nitroethane	3	729.5
600-25-9	1-Chloro-1-nitropropane	3, 6	729.5
621-64-7	N-Nitrosodi-n-propylamine	3	Nitrosoamine

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
624-83-9	Methyl isocyanate	2, 3	3.6
630-08-0	Carbon monoxide	1	2,000.0
661-97-2	Chlorofluorocarbon-216 (CFC-216, R-216)	5	2,000.0
680-31-9	Hexamethyl phosphoramide	2, 3	25.0
684-93-5	N-Nitroso-N-methylurea	2, 3	Nitrosoamine
759-73-9	N-Nitroso-N-ethylurea	3	Nitrosoamine
768-52-5	N-Isopropylaniline	3	729.5
822-06-0	Hexamethylene-1,6-diisocyanate	2	2,000.0
924-16-3	N-Nitrosodi-n-butylamine	3	Nitrosoamine
930-55-2	N-Nitrosopyrrolidine	3	Nitrosoamine
944-22-9	Fonofos	3, 6	7.4
954-56-3	Chlorofluorocarbon-111 (CFC-111)	5	2,000.0
999-61-1	2-Hydroxypropyl acrylate	3	218.6
1116-54-7	N-Nitrosodiethanolamine	3	Nitrosoamine
1120-71-4	1,3-Propane sultone	2, 3	25.0
1189-85-1	tert-Butyl chromate, as Cr	2, 3	0.01
1300-73-8	Xylidine, mixed isomers	3	182
1303-96-4*	Borates, tetra, sodium salts, decahydrate	3	365.8
1303-96-4*	Borates, tetra, sodium salts, pentahydrate	3	73.6
1305-62-0	Calcium hydroxide	3	365.8
1305-78-8	Calcium oxide	3	145.1
1310-58-3	Potassium hydroxide	3	88.3
1310-73-2	Sodium hydroxide	3	88.3
1314-80-3	Phosphorus pentasulfide	3	73.6
1319-77-3	Cresol, all isomers	2, 3	1,604
1321-64-8	Pentachloronaphthalene	3	35.7
1321-65-9	Trichloronaphthalene	3	365.8
1321-74-0*	Divinyl benzene	3	2,000.0

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
1330-20-7	Xylene, mixed isomers (Xylol)	2, 3	2,000.0
1332-21-4*	Asbestos, all forms	2, 3	2.5
1333-86-4	Carbon black	3	254.4
1335-87-1	Hexachloronaphthalene	3	14.5
1335-88-2	Tetrachloronaphthalene	3	145.1
1336-36-3	Polychlorinated biphenyls (PCB)	2, 3	0.01
1338-23-4	Methyl ethyl ketone peroxide	3	67.3
1402-68-2	Aflatoxins	3	2.5
1477-55-0	m-Xylene-alpha,alpha'-diamine	3	4.4
1563-66-2	Carbofuran	3, 6	7.4
1582-09-8	Trifluralin	2	2,000.0
1634-04-4	Methyl tert-butyl ether	2	2,000.0
1649-08-7	Hydrochlorofluorocarbon-132b (HCFC-132b)	5	2,000.0
1717-00-6	Hydrochlorofluorocarbon-141b (HCFC-141b, R-141b)	5	2,000.0
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	2, 3	0.00001
1910-42-5*	Paraquat (respirable sizes)	3, 6	7.4
1912-24-9	Atrazine	3, 6	365.8
2039-87-4	o-Chlorostyrene	3	2,000.0
2104-64-5	EPN	3, 6	35.7
2234-13-1	Octachloronaphthalene	3	7.4
2238-07-5	Diglycidyl ether (DGE)	3	35.7
2354-06-5	Chlorofluorocarbon-213 (CFC-213, R-213)	5	2,000.0
2425-06-1	Captafol	3, 6	7.4
2426-08-6	n-Butyl glycidyl ether (BGE)	3	2,000.0
2699-79-8	Sulfuryl fluoride	3, 6	1459.1
2921-88-2	Chlorpyrifos	3, 6	14.5
3182-26-1	Chlorofluorocarbon-212 (CFC-212, R-212)	5	2,000.0
3547-04-4	DDE	2	2,000.0
3689-24-5	Sulfotep (TEDP)	3, 6	14.5

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
4016-14-2	Isopropyl glycidyl ether	3	2,000.0
4098-71-9	Isophorone diisocyanate	3	6.5
4259-43-2	Chlorofluorocarbon-215 (CFC-215, R-215)	5	2,000.0
4342-03-4	Dacarbazine	3	Group B Pharmaceuti- cal
4549-40-0	N-Nitrosomethylvinylamine	3	Nitrosoamine
5124-30-1	Methylene bis(4-cyclohexylisocyanate)	3	3.9
6923-22-4	Monocrotophos	3, 6	18.3
7429-90-5*	Aluminum alkyls	3	145.1
7429-90-5*	Aluminum pyro powders	3	365.8
7429-90-5*	Aluminum soluble salts	3	145.1
7439-92-1*	Lead compounds	2	2,000.0
7439-96-5*	Manganese, as Mn, dust and compounds	2, 3	222.9
7439-97-6*	Mercury alkyl compounds, as Hg	2, 3	0.7
7439-97-6*	Mercury, all forms except alkyl, vapor, as Hg	2, 3	3.6
7439-97-6*	Mercury aryl & inorganic compounds, as Hg	2, 3	7.4
7439-98-7*	Molybdenum, as Mo, soluble compounds	3	365.8
7440-02-0*	Nickel compounds other than nickel subsulfide, as Ni	2, 3	25.0
7440-06-4	Platinum (metal)	3	73.6
7440-06-4*	Platinum, soluble salts, as Pt	3	0.15
7440-16-6	Rhodium (metal)	3	73.6
7440-16-6*	Rhodium, soluble compounds, as Rh	3	0.74
7440-28-0*	Thallium, soluble compounds, as Tl	3	7.4
7440-31-5	Tin (metal)	3	145.1
7440-31-5*	Tin organic compounds, as Sn	3	7.4
7440-31-5*	Tin oxide & inorganic compounds, except SnH ₄ , as Sn	3	145.1
7440-33-7*	Tungsten - as W, insoluble compounds	3	365.8
7440-33-7*	Tungsten - as W, soluble compounds	3	73.6

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
7440-36-0*	Antimony & compounds, as Sb	2, 3	35.7
7440-38-2*	Arsenic and inorganic compounds, as As	2, 3	2.5
7440-39-3*	Barium, soluble compounds, as Ba	3	35.7
7440-41-7*	Beryllium and beryllium compounds, as Be	2, 3	2.5
7440-43-9*	Cadmium and cadmium compounds, as Cd	2, 3	2.5
7440-47-3*	Chromium (II) compounds, as Cr	2, 3	35.7
7440-47-3*	Chromium (III) compounds, as Cr	2, 3	35.7
7440-47-3*	Chromium (VI) compounds, as Cr, water insoluble	2, 3	0.2
7440-47-3*	Chromium (VI) compounds, as Cr, water soluble	2, 3	3.6
7440-47-3	Chromium (metal)		35.7
7440-48-4	Cobalt, as Co, metal, dust	2, 3	3.6
7440-50-8	Copper, dust & mists, as Cu	3	73.6
7440-61-1*	Uranium (natural), soluble & insoluble compounds, as U	3	14.5
7440-67-7*	Zirconium and compounds, as Zr	3	365.8
7440-74-6	Indium	3	7.4
7446-09-5	Sulfur dioxide	1, 4	2,000.0
7550-45-0	Titanium tetrachloride	2	2,000.0
7553-56-2	Iodine	3	44.2
7631-90-5	Sodium bisulfite	3	365.8
7637-07-2	Boron trifluoride	3	132.5
7647-01-0	Hydrogen chloride	2, 3, 4	311.2
7664-38-2	Phosphoric acid	3	73.6
7664-39-3	Hydrogen fluoride	2, 3	111.4
7664-41-7	Ammonia	3	1,314
7664-93-9	Sulfuric acid	3	73.6
7697-37-2	Nitric acid	3	365.8
7719-09-7	Thionyl chloride	3	222.9
7719-12-2	Phosphorus trichloride	3	109.3

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
7722-84-1	Hydrogen peroxide	3	109.3
7723-14-0	Phosphorus (yellow)	2, 3	7.4
7726-95-6	Bromine	3	50.5
7782-41-4	Fluorine	3	145.1
7782-49-2*	Selenium and compounds, as Se	2, 3	14.5
7782-50-5	Chlorine	2, 3	218.6
7782-65-2	Germanium tetrahydride	3	44.2
7783-06-4	Hydrogen sulfide	3	1,021.8
7783-60-0	Sulfur tetrafluoride	3	17.7
7784-42-1	Arsine	2, 3	14.5
7786-34-7	Mevinphos (Phosdrin)	3, 6	7.4
7789-30-2	Bromine pentafluoride	3	50.5
7790-91-2	Chlorine trifluoride	3	17.7
7803-51-2	Phosphine	2, 3	29.4
7803-52-3	Stibine (Antimony hydride)	3, 6	35.7
7803-62-5	Silicon tetrahydride (Silane)	3	510.9
8001-35-2	Chlorinated camphene	2, 3, 6	35.7
8003-34-7	Pyrethrum	3, 6	365.8
8022-00-2	Methyl demeton	3, 6	35.7
8052-41-3	Stoddard solvent (Mineral spirits)	3	2,000.0
8065-48-3	Demeton	3, 6	7.4
9004-66-4	Iron dextran complex	3	Group B Pharmaceuti- cal
10025-67-9	Sulfur monochloride	3	267.0
10025-87-3	Phosphorus oxychloride	3	44.2
10026-13-8	Phosphorus pentachloride	3	73.6
10035-10-6	Hydrogen bromide	3	443.6
10049-04-4	Chlorine dioxide	3	21.0
10294-33-4	Boron tribromide	3	444

Chemical Abstract Service Number ⁷	Air Contaminant Name	Sources of Regulation (See Footnotes Below)	Inclusion Level (lbs/yr)
12035-72-2	Nickel subsulfide	2, 3	2.5
13010-47-4	1-(2-Chloroethyl)-3-cyclohexyl-1-nitrosourea (CCNU)	3	Group B Pharmaceuti- cal
13121-70-5	Cyhexatin	3, 6	365.8
13256-22-9	N-Nitrososarcosine	3	Nitrosoamine
13494-80-9*	Tellurium and compounds, as Te	3	7.4
14977-61-8	Chromyl chloride, as Cr	2, 3	0.01
16219-75-3	Ethylidene norbornene	3	1,110.1
16543-55-8	N'-Nitrosornicotine	3	Nitrosoamine
16752-77-5	Methomyl	3, 6	182.9
17804-35-2	Benomyl	3, 6	729.5
18883-66-4	Streptozotocin	3	Group B Pharmaceuti- cal
19287-45-7	Diborane	3	7.4
21351-79-1	Cesium hydroxide	3	145
23214-92-8	Adriamycin	3	Group B Pharmaceuti- cal
25013-15-4	Vinyl toluene	3	2,000.0
25321-14-6*	Dinitrotoluene	2, 3	109.3
25551-13-7	Trimethyl benzene, mixed isomers	3	2,000.0
25639-42-3	Methylcyclohexanol	3	2,000.0
26140-60-3	Terphenyls	3	222.9
26952-21-6	Isooctyl alcohol	3	2,000.0
29191-52-4	Anisidine	2, 3	25
29255-31-0	Chlorofluorocarbon-214 (CFC-214, R-214)	5	2,000.0
39156-41-7	2,4-Diaminoanisole sulfate	3	25.0
55720-99-5	Chlorinated diphenyl oxide	3	35.7
61788-32-7	Hydrogenated terphenyls	3	365.8
63938-10-3*	Hydrochlorofluorocarbon-124 (HCFC-124, R-124)	5	2,000.0

These footnotes are for informational purposes only and may change as the regulations change:

1. Criteria Pollutant
 2. Federal Hazardous Air Pollutant
 3. State Hazardous Air Pollutant
 4. Federal New Source Performance Standard
 5. Stratospheric Ozone Depleting Substance
 6. Pesticides, Rodenticides, Insecticides, Herbicides and Fungicides
 7. The Chemical Abstract Service or CAS numbers refer to the unique chemical abstracts service registry number assigned to a specific chemical, isomer or mixture of chemicals or isomers and recorded in the CAS chemical registry system by the Chemical Abstracts Service, PO Box 3012, Columbus OH 42310, phone 1-800-848-5638 ext.2308.
 8. Glycol ethers means any compound which can be described by the following chemical formula: $R(OCH_2CH_2)_n-OR'$
 where: $n = 1, 2 \text{ or } 3$
 $R = \text{alkyl C7 or less}$
 $\text{or } R = \text{phenyl or alkyl substituted phenyl}$
 $R' = \text{H or alkyl C7 or less or ester, sulfate, phosphate, nitrate, sulfonate}$
 $(\text{i.e., any group that will readily come off})$
- * Indicates contaminants for which multiple CAS numbers may apply. For contaminants listed as a metal and its compounds, the given CAS number refers to the metal.
- ** For groups of air contaminants, the sum of the maximum theoretical emissions of all air contaminants in the group is used for comparison with the group inclusion level in Table 2. Each air contaminant in the group is listed alphabetically within the table.

Note: An emissions unit, operation or activity is considered to be insignificant if its emissions are 10 percent of the levels in this table.

APPENDIX F

MAXIMUM THEORETICAL EMISSIONS

APPENDIX F MAXIMUM THEORETICAL EMISSIONS

Maximum Theoretical Emissions are used to determine whether a facility is required to get a permit and to determine which emissions units, operations, activities, and air contaminants are significant for inclusion in the permit application.

Maximum Theoretical Emissions means the quantity of air contaminants that theoretically could be emitted by a stationary source without control devices based on the design capacity or maximum production capacity of the source. When determining annual maximum theoretical emissions (MTE), an emissions unit, operation or activity shall be presumed to operate 8,760 hours per year (24 hours per day, 365 days per year) unless its physical design precludes 8,760 hours of operation per year. If your facility's physical design restricts the number of hours you may operate, you should take into account this restriction when calculating your annual MTE. Take into account realistic operating conditions in determining emissions. In determining the MTE of volatile organic compounds (VOCs) for an emissions unit, operation, or activity, include in the design capacity or maximum production capacity the use of raw materials, coatings and inks with the highest VOC content.

Hourly Maximum Theoretical Emissions -- Boilers, Asphalt Plants...

For emissions units that have emissions factors available such as boilers, asphalt plants, fuel-burning equipment, etc., you can use the following basic equation to calculate your MTE:

$$(\text{emissions factor}) \times (\text{maximum hourly production rate}) = \text{lb/hr MTE}$$

Emissions factors can be found in **AP-42** (see **APPENDIX D**) or from stack test results.

Hourly Maximum Theoretical Emissions -- VOC Emissions Units

In determining the hourly MTE of volatile organic compounds (VOCs) for an emissions unit, operation or activity, you need to look at both the VOC content and the maximum hourly usage rate of raw materials, coatings and inks used. The material with the highest VOC content will not necessarily correspond to the MTE of VOCs for a particular emissions unit, operation or activity. A lower VOC content material with a higher maximum hourly usage rate could actually determine the MTE. For VOC emissions units, such as coating or printing operations, the hourly MTE is the product of the VOC content of a material times the maximum hourly usage rate of that material:

$$(\text{VOC content of worst case material}) \times (\text{maximum hourly usage rate of that material}) = \text{lb/hr MTE}$$

Here are two ways to determine VOC content:

1. $(\text{Material density}) \times (\text{weight \% VOC}) = \text{VOC content}$

OR

2. $(\text{Solvent density not including water}) \times (\text{volume \% VOC}) = \text{VOC content}$

Example 1: Acme Coaters, Inc. operates a metal parts spray painting booth. They use the following paints:

<u>Paint</u>	<u>VOC content</u>	<u>Maximum hourly usage rate</u>
A	5.0 lbs VOC/gallon	2.0 gallons/hour
B	4.0 lbs VOC/gallon	3.0 gallons/hour

For this process paint B is the worst case material and the hourly MTE is calculated as follows:

$$(4.0 \text{ lbs VOC/gallon}) \times (3.0 \text{ gallons/hour}) = \mathbf{12.0 \text{ lbs VOC/hour MTE}}$$

Note that if paint A was considered to be the worst case material the resulting MTE would not truly represent worst case as follows:

$$(5.0 \text{ lbs VOC/gallon}) \times (2.0 \text{ gallons/hour}) = 10.0 \text{ lbs VOC/hour (This is not the MTE.)}$$

Hourly Maximum Theoretical Emissions - Hazardous Air Contaminants

The determination of hourly MTE for hazardous air contaminants is much the same as the determination for VOCs. It is generally the product of the hazardous air contaminant content of a raw material times the maximum hourly usage rate of that material.

$$(\text{haz. air contaminant content of worst case material}) \times (\text{max. hourly usage rate of that material}) = \text{lb/hr MTE}$$

However, if a hazardous air contaminant is created during the operation of the process, you must add the amount of the hazardous air contaminant created to the MTE. Similarly if a hazardous air contaminant is destroyed during the operation of the process, you must subtract the amount of the hazardous air contaminant destroyed from the MTE.

Just as in determining the hourly MTE for VOCs, the material with the highest hazardous air contaminant content will not necessarily correspond to the MTE of the hazardous air contaminant for a particular emissions unit, operation or activity. A lower hazardous air contaminant content material with a higher maximum hourly usage rate could actually determine the MTE.

Example 2: Circle Corp. operates a process that uses a raw material which contains the following hazardous air contaminants:

<u>Contaminant</u>	<u>Hazardous air contaminant content of raw material</u>
benzene	2 percent by weight
formaldehyde	1 percent by weight

The maximum usage rate of the raw material is 1000 pounds per hour. During the operation of the process 25 percent of the benzene is converted to formaldehyde, carbon monoxide and water. For every pound of benzene converted, 0.8 pounds of formaldehyde are formed. No other hazardous air contaminants are created or destroyed in this process. The MTEs for benzene and formaldehyde are calculated as follows:

Benzene:

(benzene introduced to process) - (benzene destroyed during process) = lb/hr MTE

(benzene introduced to process) = (0.02 lbs benzene/lb raw material) x (1000 lbs raw material/hr)
= 20 lbs benzene introduced

(benzene destroyed during process) = (0.25) x (benzene introduced to process)
= (0.25) x (20 lbs benzene introduced)
= 5 lbs benzene destroyed

(20 lbs benzene introduced) - (5 lbs benzene destroyed) = **15 lbs benzene/hr MTE**

Formaldehyde (form.):

(form. introduced to process) + (form. created during process) = lb form./hr MTE

(form. introduced to process) = (0.01 lbs form./lb raw material) x (1000 lbs raw material/hr)
= 10 lbs form. introduced

(form. created) = (0.8 lb form. created/1 lb benzene destroyed) x (benzene destroyed)
= (0.8 lb form. created/1 lb benzene destroyed) x (5 lbs benzene destroyed)
= 4 lbs form. created

(10 lbs form. introduced) + (4 lbs form. created) = **14 lbs formaldehyde/hr MTE**

Annual Maximum Theoretical Emissions

On some forms you will need to report your annual MTE. When determining annual MTE, an emissions unit, operation or activity shall be presumed to operate 8,760 hours per year (24 hours per day, 365 days per year) unless its physical design precludes 8,760 hours of operation per year. If your facility's physical design restricts the number of hours you may operate, you should take into account this restriction when calculating your annual MTE. Take into account realistic operating conditions in determining emissions. If you do not have any physical restrictions on your operating hours, you can use the following equation:

(lb/hr MTE) x (24 hrs/day) x (365 days/year) x (1 ton/2000 lbs) = tons/year MTE

If you do have physical restrictions on your operating hours, you can use the following equation:

(lb/hr MTE) x (maximum operating hours possible/year) x (1 ton/2000 lbs) = tons/year MTE

Example 3: XYZ Company has a boiler to provide process steam at their plant.

Emissions Unit:	A 90 million BTU per hour tangential fired boiler
Maximum Rated Capacity:	90 million BTU per hour
Fuel:	#5 fuel oil
Heating Value:	148,000 BTU per gallon
Maximum Sulfur Content:	2.0% (by weight)
Control Device:	Baghouse with a particulate matter control efficiency of 99.5%

XYZ Co. uses **AP-42** to find these emission factors for tangentially fired boilers burning #5 fuel oil:

Particulate Matter: 10.0 pounds per 1000 gallons oil burned (lbs/1000 gal)
 Sulfur Dioxide: (159.3 lbs/1000 gal) x (percent sulfur by weight)
 Nitrogen Oxides: 42.0 lbs/1000 gal
 Carbon Monoxide: 5.0 lbs/1000 gal
 Volatile Organic Compounds: 0.76 lbs/1000 gal

Using this information, here is how XYZ Co. calculates their hourly MTE of particulate matter for this boiler:

$$(10.0 \text{ lbs/1000 gal}) \times (1 \text{ gal/148,000 BTU}) \times (90 \times 10^6 \text{ BTU/hr}) = \mathbf{6.1 \text{ lbs particulate matter/hour}}$$

To calculate the annual MTE of particulate matter for this boiler, XYZ Co. must assume the boiler is fired at maximum capacity at all times, and the physical design of the boiler does not preclude the number of hours the boiler can operate. Here are their calculations:

$$(\mathbf{6.1 \text{ lbs/hr}}) \times (24 \text{ hrs/day}) \times (365 \text{ days/year}) \times (1 \text{ ton/2000 lbs}) = \mathbf{26.7 \text{ tons particulate matter/year}}$$

Note: The particulate matter control efficiency of 99.5% for the baghouse was not taken into account when calculating the MTE because the definition of MTE is the "...quantity of air contaminants that theoretically could be emitted by a stationary source without control devices ..."

Example 4: Fact Inc. has a thin film evaporator that can process 500 gallons of solvent per hour. The processed solvent is fed to a 5,000 gallon tank for storage. This 5,000 gallon tank can only be unloaded at a rate of 250 gallons per hour due to the pump capacity. The processed solvent is collected in a primary condenser which has a collection efficiency of 99.5%. This primary condenser is considered to be part of the process because it is product collection equipment. The emissions that are exhausted from the primary condenser are controlled by a sparge tank with a control efficiency of 85%. The following solvents are processed by the thin film evaporator:

Solvent Density (pounds per gallon)

Acetone	6.59
Heptane	5.81
Hexane	5.61
Toluene	7.26

Fact Inc. uses toluene as the worst case solvent processed in the thin film evaporator to calculate the hourly MTE:

$$(500 \text{ gals/hour}) \times (7.26 \text{ lbs/gal}) \times (1 - 0.995 \text{ product collection}) = \mathbf{18.15 \text{ lbs of VOC/hour}}$$

When calculating the annual MTE, Fact Inc. must take into account several restrictions on operating hours. First they calculate the time it takes to fill up the 5,000 gallon storage tank when the thin film evaporator is running at a maximum processing rate of 500 gallons per hour:

$$(5,000 \text{ gallon tank}) \times (1 \text{ hour/500 gals}) = \mathbf{10 \text{ hours to load the storage tank}}$$

Fact Inc. then calculates the time it takes to unload the 5,000 gallon storage tank once it is full while unloading at the maximum rate of 250 gallons per hour:

$$(5,000 \text{ gallon tank}) \times (1 \text{ hour}/250 \text{ gals}) = 20 \text{ hours to unload the storage tank}$$

Therefore, tank unloading limits the number of hours the evaporator can operate. So in a 20 hour period the thin film evaporator can only run a maximum of 10 hours. This limits the maximum number of hours the thin film evaporator can operate during a year as follows:

$$(10 \text{ hours of operation}/20 \text{ hour period}) \times (24 \text{ hours/day}) \times (365 \text{ days/year}) =$$

4,380 hours maximum per year that the thin film evaporator can operate

$$(18.15 \text{ lbs/hour}) \times (4,380 \text{ hours/year}) \times (1 \text{ ton}/2000 \text{ lbs}) = 39.7 \text{ tons of VOC/year}$$

Note: The volatile organic compound (VOC) control efficiency of 85% for the sparge tank was not taken into account when calculating the MTE because the definition of MTE is the "...quantity of air contaminants that theoretically could be emitted by a stationary source without control devices ..."

Annual Maximum Theoretical Emissions - VOCs and Hazardous Air Contaminants

In determining the MTE of VOCs or hazardous air contaminants for an emissions unit, operation or activity, include in the design capacity or maximum production capacity the use of raw materials, coatings and inks with the highest VOC content.

However, in considering the use of these materials, take into account realistic operating conditions. There is no single method for doing this. The maximum production capacity should reflect the absolute maximum amount of materials that an emissions unit, operation or activity could use in any one year for the duration of the permit. The following example shows two methods that could be used to determine maximum production capacity:

Example 5: Printers, Inc. operates a printing press which normally uses ink N with the following specifications:

VOC content:	2.0 lbs VOC/gallon
Methyl isobutyl ketone (MIBK) content:	0.5 lbs MIBK/gallon
Maximum hourly ink use:	2.0 gallons/hour
No other hazardous air contaminants are contained in the ink.	

The absolute maximum amount of ink N used in any year is 8000 gallons.

Printers, Inc. uses a limited amount of another ink, ink S, for a "Forth of July Specialty Product". That ink has the following specifications:

VOC content:	2.8 lbs VOC/gallon
MIBK content:	2.8 lbs MIBK/gallon
Maximum hourly ink use:	2.0 gallons/hour
No other hazardous air contaminants are contained in the ink.	

They never use more than 25.0 gallons of ink S in any year.

Due to clean-up and set-up time, the press could only operate a maximum of 60 percent of the time during any year.

Method 1 for determining annual MTE.

Determine a weighted average ink VOC and MIBK content:

$$\text{Ave. VOC content} = [(\text{VOC from ink N/yr}) + (\text{VOC from ink S/yr})]/(\text{Total annual ink use})$$

$$(\text{VOC from ink N/yr}) = (8000 \text{ gal ink N/yr}) \times (2.0 \text{ lbs VOC/gal}) = 16,000 \text{ lb VOC ink N/yr}$$

$$(\text{VOC from ink S/yr}) = (25 \text{ gal ink S/yr}) \times (2.8 \text{ lbs VOC/gal}) = 70 \text{ lb VOC ink S/yr}$$

$$(\text{Total annual ink use}) = (8000 \text{ gal ink N/yr}) + (25 \text{ gal ink S/yr}) = 8025 \text{ gal ink/yr}$$

$$\begin{aligned} \text{Ave. VOC content} &= [(16,000 \text{ lb VOC ink N/yr}) + (70 \text{ lb VOC ink S/yr})]/(8025 \text{ gal ink/yr}) \\ &= 2.0025 \text{ lbs VOC/gal} \end{aligned}$$

$$\text{Ave. MIBK content} = [(\text{MIBK from ink N/yr}) + (\text{MIBK from ink S/yr})]/(\text{Total annual ink use})$$

$$(\text{MIBK from ink N/yr}) = (8000 \text{ gal ink N/yr}) \times (0.5 \text{ lbs MIBK/gal}) = 4000 \text{ lb MIBK ink N/yr}$$

$$(\text{MIBK from ink S/yr}) = (25 \text{ gal ink S/yr}) \times (2.8 \text{ lbs MIBK/gal}) = 70 \text{ lb MIBK ink S/yr}$$

$$(\text{Total annual ink use}) = (8000 \text{ gal ink N/yr}) + (25 \text{ gal ink S/yr}) = 8025 \text{ gal ink/yr}$$

$$\begin{aligned} \text{Ave. MIBK content} &= [(4000 \text{ lb MIBK ink N/yr}) + (70 \text{ lb MIBK ink S/yr})]/(8025 \text{ gal ink/yr}) \\ &= 0.507 \text{ lbs MIBK/gal} \end{aligned}$$

Calculating the MTE for VOC:

$$\begin{aligned} &(\text{Maximum hourly ink use}) \times (\text{Ave. VOC content}) \times (\text{Maximum hours of operation}) \times (1 \text{ ton}/2000 \text{ lbs}) \\ &= \text{ton VOC/yr MTE} \end{aligned}$$

$$(\text{Maximum hourly ink use}) = 2.0 \text{ gallons/hour (same for both inks)}$$

$$\begin{aligned} (\text{Maximum hours of operation}) &= (0.60) \times (24 \text{ hr/day}) \times (365 \text{ days/yr}) \\ &= 5256 \text{ hrs/yr} \end{aligned}$$

$$(2.0 \text{ gals/hr}) \times (2.0025 \text{ lbs/gal}) \times (5256 \text{ hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs}) = \mathbf{10.5 \text{ tons VOC/yr MTE}}$$

Calculating the MTE for MIBK:

$$\begin{aligned} &(\text{Maximum hourly ink use}) \times (\text{Ave. MIBK content}) \times (\text{Max. hours of operation}) \times (1 \text{ ton}/2000 \text{ lbs}) \\ &= \text{ton MIBK/yr MTE} \end{aligned}$$

$$(\text{Maximum hourly ink use}) = 2.0 \text{ gallons/hour (same for both inks)}$$

$$\begin{aligned} (\text{Maximum hours of operation}) &= (0.60) \times (24 \text{ hr/day}) \times (365 \text{ days/yr}) \\ &= 5256 \text{ hrs/yr} \end{aligned}$$

$$(2.0 \text{ gals/hr}) \times (0.507 \text{ lbs/gal}) \times (5256 \text{ hrs/yr}) \times (1 \text{ ton}/2000 \text{ lbs}) = \mathbf{2.66 \text{ tons MIBK/yr MTE}}$$

Method 2 for determining annual MTE.

Assume the absolute maximum use of ink S would never exceed 50 gallons per year. Using twice the normal use as a conservative estimate. Assume that the 50 gallons of ink S would be applied at the maximum ink use rate of 2.0 gallons per hour. Calculate the time it would take to apply ink S as follows:

$$(50 \text{ gal ink S/yr}) \times (1 \text{ hr}/2.0 \text{ gal ink S applied}) = 25 \text{ hr/yr used to apply ink S}$$

Calculate the remaining time available apply ink N as follows:

$$(0.60) \times (8760 \text{ hr/yr}) - (25 \text{ hr/yr}) = 5231 \text{ hrs/hr}$$

Calculating the MTE for VOCs:

$$[(\text{lbs VOC from ink S/yr}) + (\text{lbs VOC from ink N/yr})] \times (1 \text{ ton}/2000 \text{ lbs}) = \text{ton VOC/yr MTE}$$

$$\begin{aligned} (\text{lbs VOC from ink S/yr}) &= (\text{max. hrly ink S use}) \times (\text{VOC content ink S}) \times (\text{hr/yr apply ink S}) \\ &= (2.0 \text{ gal/hr}) \times (2.8 \text{ lbs VOC/gal}) \times (25 \text{ hr/yr}) \\ &= 140 \text{ lbs VOC from ink S/yr} \end{aligned}$$

$$\begin{aligned} (\text{lbs VOC from ink N/yr}) &= (\text{max. hrly ink N use}) \times (\text{VOC content ink N}) \times (\text{hr/yr apply ink N}) \\ &= (2.0 \text{ gal/hr}) \times (2.0 \text{ lbs VOC/gal}) \times (5231 \text{ hr/yr}) \\ &= 20924 \text{ lbs VOC from ink N/yr} \end{aligned}$$

$$[(140 \text{ lbs VOC ink S/yr}) + (20924 \text{ lbs VOC ink N/yr})] \times (1 \text{ ton}/2000 \text{ lbs}) = \mathbf{10.53 \text{ tons VOC/yr MTE}}$$

Calculating the MTE for MIBK:

$$[(\text{lbs MIBK from ink S/yr}) + (\text{lbs MIBK from ink N/yr})] \times (1 \text{ ton}/2000 \text{ lbs}) = \text{ton MIBK/yr MTE}$$

$$\begin{aligned} (\text{lbs MIBK from ink S/yr}) &= (\text{max. hrly ink S use}) \times (\text{MIBK content ink S}) \times (\text{hr/yr apply ink S}) \\ &= (2.0 \text{ gal/hr}) \times (2.8 \text{ lbs MIBK/gal}) \times (25 \text{ hr/yr}) \\ &= 140 \text{ lbs MIBK from ink S/yr} \end{aligned}$$

$$\begin{aligned} (\text{lbs MIBK from ink N/yr}) &= (\text{max. hrly ink N use}) \times (\text{MIBK content ink N}) \times (\text{hr/yr app. ink N}) \\ &= (2.0 \text{ gal/hr}) \times (0.5 \text{ lbs MIBK/gal}) \times (5231 \text{ hr/yr}) \\ &= 5231 \text{ lbs MIBK from ink N/yr} \end{aligned}$$

$$[(140 \text{ lbs MIBK ink S/yr}) + (5231 \text{ lbs MIBK ink N/yr})] \times (1 \text{ ton}/2000 \text{ lbs}) = \mathbf{2.69 \text{ tons MIBK/yr MTE}}$$

Maximum Theoretical Emissions vs. Potential to Emit

<i>Maximum Theoretical Emissions</i>	<i>Potential to Emit</i>
Control equipment is <u>not</u> taken into account.	Control equipment is taken into account if it is federally enforceable.
Physical design restrictions which limit the number of hours a source can operate are taken into account.	Any physical or operational limitation on the capacity of the source to emit air contaminants are taken into account if that limitation is federally enforceable.
Enforceable limitations on hours of operation and type or amount of material combusted, stored or processed are <u>not</u> taken into account.	Enforceable limitations on hours of operation and type or amount of material combusted, stored or processed are taken into account.

APPENDIX G

POTENTIAL TO EMIT

APPENDIX G POTENTIAL TO EMIT

Potential to emit is used to determine if you are a **major source**. **Potential to emit** means the maximum capacity of an emissions unit, operation or activity to emit any air contaminant under its physical and operational design. Any physical or operational limitation on the capacity of an emissions unit, operation or activity to emit an air contaminant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is **federally enforceable**. Generally a physical or operation limitation is federally enforceable if it is a requirement under the Clean Air Act OR it is a voluntary restriction contained in a federally enforceable permit condition and it is enforceable as a practical matter. For more details on federal enforceability, see **APPENDIX K**. Wisconsin's new source permits issued with US EPA approval contain federally enforceable conditions. PLEASE NOTE THAT PERMITS ISSUED UNDER WISCONSIN'S MANDATORY OPERATION PERMIT PROGRAM ARE NOT FEDERALLY ENFORCEABLE.

EXAMPLE 1: XYZ Company operates a boiler to provide process steam at their plant.

Emissions Unit:	A 90 million BTU per hour spreader stoker boiler
Maximum Rated Capacity:	90 million BTU per hour
Fuel:	Bituminous Coal
Heating Value:	21 million BTU per ton
Maximum Sulfur Content:	1.0% (by weight)
Control Device:	Baghouse with a particulate matter control efficiency of 99.5%
Installation Date:	1988

XYZ Company was issued a new source permit in 1988 which limited their particulate matter emissions to 0.15 pounds per million BTU heat input (per s. NR 415.06(2)(a), Wis. Adm. Code). Because this limitation is included in a federally enforceable new source permit XYZ Company calculated their PTE for particulate matter as follows:

$$(0.15 \text{ lbs/MMBTU}) \times (90.0 \text{ MMBTU/hr}) = \mathbf{13.5 \text{ lbs particulate matter per hour}}$$

To calculate the annual PTE of particulate matter for this boiler, XYZ Company assumes the boiler is fired at maximum capacity at all times because the physical design of the boiler does not preclude the number of hours the boiler can operate and that there are no restrictions on hours of operation or on the type or amount of material combusted in their permit. Here are their calculations:

$$(\mathbf{13.5 \text{ lbs/hr}}) \times (24 \text{ hrs/day}) \times (365 \text{ days/year}) \times (1 \text{ ton}/2000 \text{ lbs}) = \mathbf{59.1 \text{ tons particulate matter/yr}}$$

EXAMPLE 2: JD Paving Company operates a portable 220 ton per hour hot mix asphalt plant which was constructed in 1987. Because this plant is subject to the New Source Performance Standard (NSPS) for Asphalt concrete plants contained in the Clean Air Act they can take the particulate matter limitation from the NSPS into account when they calculate their PTE. The NSPS limitation of not more than 0.039 grains per dry standard cubic feet of exhaust gas is also included in s. NR 440.25, Wis. Adm. Code. The maximum exhaust gas rate of the plant is 20,000 dry standard cubic feet per minute. JD Paving calculates their hourly PTE as follows:

$$(0.039 \text{ gr/dscgf}) \times (1 \text{ lb}/7000 \text{ gr}) \times (20,000 \text{ dscf/min}) \times (60 \text{ min/hr}) = \mathbf{6.7 \text{ lbs particulate matter/hr}}$$

JD Paving has a new source permit for this asphalt plant which limits them to operating not more than 6600 hours per year. The permit requires that they keep operating hour records to demonstrate compliance with this limitation. They calculate their annual PTE of particulate matter as follows:

$$(6.7 \text{ lbs/hr}) \times (6600 \text{ hr/year}) \times (1 \text{ ton}/2000 \text{ lbs}) = \mathbf{22.1 \text{ tons of particulate matter per year.}}$$

EXAMPLE 3: Widgettes, Inc. paints miscellaneous metal parts. They installed their new facility in Dodge County in 1990 and received a new source permit at that time. They use solvent based air dried paints which do not contain any water. They are subject to the RACT requirements of 3.5 pounds per gallon coating, excluding water, delivered to a coating applicator. They operate 4 paint guns in their painting operations which each spray a maximum of 4.25 gallons per hour. Widgettes, Inc. calculates their hourly VOC PTE as follows:

$$(4 \text{ guns}) \times (4.25 \text{ gal/hr}) \times (3.5 \text{ lbs/gal}) = \mathbf{59.5 \text{ lbs VOC/hour}}$$

To avoid Prevention of Significant Deterioration (PSD) requirements, Widgettes, Inc. took a voluntary restriction in their permit to keep their VOC emission less than 250 tons per year. The restriction limited them to using not more than 11,800 gallons of paint per month. Their permit required that they keep monthly paint usage records to demonstrate compliance with this limit. Additionally, they were required to keep daily records of the VOC content, density and the weight percent solvent, solids, and water of each paint used. Widgettes, Inc. calculates their annual VOC PTE as follows:

$$(11,800 \text{ gal/mo}) \times (3.5 \text{ lbs/gal}) \times (12 \text{ mo/yr}) \times (1 \text{ ton}/2000 \text{ lbs}) = \mathbf{247.8 \text{ tons VOC/year}}$$

MAXIMUM THEORETICAL EMISSIONS vs. POTENTIAL TO EMIT

<i>Maximum Theoretical Emissions</i>	<i>Potential to Emit</i>
Control equipment is <u>not</u> taken into account.	Control equipment is taken into account if it is federally enforceable.
Physical design restrictions which limit the number of hours a source can operate are taken into account.	Any physical or operational limitation on the capacity of the source to emit air contaminants are taken into account if that limitation is federally enforceable.
Enforceable limitations on hours of operation and type or amount of material combusted, stored or processed are <u>not</u> taken into account.	Enforceable limitations on hours of operation and type or amount of material combusted, stored or processed are taken into account.

APPENDIX H

MAJOR SOURCE

APPENDIX H MAJOR SOURCE

Major source means any **stationary source**, or any group of stationary sources, that is located on one or more contiguous or adjacent properties, is under common control of the same person or persons under common control, belongs to a single major industrial grouping and that is described in par. (a), (b) or (c). For the purposes of defining "major source", a stationary source or group of stationary sources shall be considered part of a single major industrial grouping if all of the pollutant emitting activities at the source or group of sources have the same 2-digit code as described in the Standard Industrial Classification Manual, 1987, incorporated by reference in ch. NR 484.

(a) A **stationary source** that, for pollutants other than radionuclides, emits or has the **potential to emit**¹, in the aggregate, 10 tons per year (tpy) or more of any **hazardous air pollutant** which has been listed pursuant to section 112(b) of the act (42 USC 7412(b))², 25 tpy or more of any combination of those hazardous air pollutants, or a lesser quantity as the administrator may establish by rule. Notwithstanding the preceding sentence, emissions from any oil or gas exploration or production well, with its associated equipment, and emissions from any pipeline compressor or pump station may not be aggregated with emissions from other similar units, whether or not the units are in a contiguous area or under common control, to determine whether the units or stations are major sources;

(b) A **stationary source** that directly emits, or has the **potential to emit**, 100 tpy or more of any air contaminant. The **fugitive emissions** of a stationary source may not be considered in determining whether it is a major source for the purposes of this definition, unless the source belongs to one of the following categories of stationary sources:

1. Coal cleaning plants with thermal dryers;
2. Kraft pulp mills;
3. Portland cement plants;
4. Primary zinc smelters;
5. Iron and steel mills;
6. Primary aluminum ore reduction plants;
7. Primary copper smelters;
8. Municipal incinerators capable of charging more than 250 tons of refuse per day;
9. Hydrofluoric, sulfuric or nitric acid plants;
10. Petroleum refineries;
11. Lime plants;
12. Phosphate rock processing plants;
13. Coke oven batteries;
14. Sulfur recovery plants;
15. Carbon black plants, furnace process;
16. Primary lead smelters;
17. Fuel conversion plants;
18. Sintering plants;
19. Secondary metal production plants;
20. Chemical process plants;
21. Fossil-fuel boilers, or combination thereof, totaling more than 250 million British thermal units per hour heat input;
22. Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
23. Taconite ore processing plants;
24. Glass fiber processing plants;
25. Charcoal production plants;
26. Fossil-fuel-fired steam electric plants of more than 250 million British thermal units per

- hour heat input; or
27. All other stationary source categories regulated by a standard promulgated under section 111 or 112 of the act (42 USC 7411 or 7412), but fugitive emissions shall be considered only for those air contaminants that have been regulated for that category; **or**

(c) A major stationary source as defined in part D of title I of the act (42 USC 7501 to 7515), which is defined as:

1. For ozone nonattainment areas³, sources with the potential to emit 100 tpy or more of volatile organic compounds or oxides of nitrogen in areas classified as "marginal" or "moderate", 50 tpy or more in areas classified as "serious", 25 tpy or more in areas classified as "severe", and 10 tpy or more in areas classified as "extreme"; except that the references in this paragraph to 100, 50, 25 and 10 tpy of nitrogen oxides do not apply with respect to any source for which the administrator has made a finding, under section 182(f)(1) or (2) of the act (42 USC 7511a(f)(1) or (2)), that requirements under section 182(f) of the act (42 USC 7511a(f)) do not apply;
2. For ozone transport regions³ established pursuant to section 184 of the act (42 USC 7511c), sources with the potential to emit 50 tpy or more of volatile organic compounds;
3. For carbon monoxide nonattainment³ areas that are classified as "serious", and in which stationary sources contribute significantly to carbon monoxide levels as determined under rules issued by the administrator, sources with the potential to emit 50 tpy or more of carbon monoxide; and
4. For particulate matter (PM₁₀) nonattainment areas³ classified as "serious", sources with the potential to emit 70 tpy or more of PM₁₀.

¹ "*potential to emit*" is defined in **APPENDIX G**. Examples of how to calculate the potential to emit are also included in that appendix.

² See **APPENDIX I** for a list of the *hazardous air pollutant* as defined by sec. 112(b) of the act (42 USC) 7412(b).

³ Nonattainment areas and transport regions for the State of Wisconsin are described in **APPENDIX J**.

APPENDIX I

HAZARDOUS AIR POLLUTANTS OF SEC. 112(b), CLEAN AIR ACT

APPENDIX I

HAZARDOUS AIR POLLUTANTS OF SEC. 112(b), CLEAN AIR ACT

CAS Number	Chemical Name	CAS Number	Chemical Name
75070	Acetaldehyde	95487	o-Cresol
60355	Acetamide	108394	m-Cresol
75058	Acetonitrile	106445	p-Cresol
98862	Acetophenone	98828	Cumene
53963	2-Acetylaminofluorene	94757	2,4-D, salts and esters
107028	Acrolein	3547044	DDE
79061	Acrylamide	334883	Diazomethane
79107	Acrylic acid	132649	Dibenzofurans
107131	Acrylonitrile	96128	1,2-Dibromo-3-chloropropane
107051	Allyl chloride	84742	Dibutylphthalate
92671	4-Aminobiphenyl	106467	1,4-Dichlorobenzene(p)
62533	Aniline	91941	3,3'-Dichlorobenzidene
90040	o-Anisidine	111444	Dichloroethyl ether (Bis(2-chloroethyl)ether)
1332214	Asbestos	542756	1,3-Dichloropropene
71432	Benzene (including benzene from gasoline)	62737	Dichlorvos
92875	Benzidine	111422	Diethanolamine
98077	Benzotrichloride	121697	N,N-Diethyl aniline (N,N-Dimethylaniline)
100447	Benzyl chloride	64675	Diethyl sulfate
92524	Biphenyl	119904	3,3'-Dimethoxybenzidine
117817	Bis(2-ethylhexyl)phthalate (DEHP)	60117	Dimethyl aminoazobenzene
542881	Bis(chloromethyl)ether	119937	3,3'-Dimethyl benzidine
75252	Bromoform	79447	Dimethyl carbamoyl chloride
106990	1,3-Butadiene	68122	Dimethyl formamide
156627	Calcium cyanamide	57147	1,1-Dimethyl hydrazine
105602	Caprolactam	131113	Dimethyl phthalate
133062	Captan	77781	Dimethyl sulfate
63252	Carbaryl	534521	4,6-Dinitro-o-cresol, and salts
75150	Carbon disulfide	51285	2,4-Dinitrophenol
56235	Carbon tetrachloride	121142	2,4-Dinitrotoluene
463581	Carbonyl sulfide	123911	1,4-Dioxane (1,4-Diethyleneoxide)
120809	Catechol	122667	1,2-Diphenylhydrazine
133904	Chloramben	106898	Epichlorohydrin (1-Chloro-2,3-epoxypropane)
57749	Chlordane	106887	1,2-Epoxybutane
7782505	Chlorine	140885	Ethyl acrylate
79118	Chloroacetic acid	100414	Ethyl benzene
532274	2-Chloroacetophenone	51796	Ethyl carbamate (Urethane)
108907	Chlorobenzene	75003	Ethyl chloride (Chloroethane)
510156	Chlorobenzilate	106934	Ethylene dibromide (Dibromoethane)
67663	Chloroform	107062	Ethylene dichloride (1,2-Dichloroethane)
107302	Chloromethyl methyl ether		
126998	Chloroprene		
1319773	Cresols/Cresylic acid (isomers and mixture)		

CAS Number	Chemical Name	CAS Number	Chemical Name
107211	Ethylene glycol	56382	Parathion
151564	Ethylene imine (Aziridine)	82688	Pentachloronitrobenzene
75218	Ethylene oxide		(Quintobenzene)
96457	Ethylene thiourea	87865	Pentachlorophenol
75343	Ethylidene dichloride (1,1-Dichloroethane)	108952	Phenol
50000	Formaldehyde	106503	p-Phenylenediamine
76448	Heptachlor	75445	Phosgene
118741	Hexachlorobenzene	7803512	Phosphine
87683	Hexachlorobutadiene	7723140	Phosphorus
77474	Hexachlorocyclopentadiene	85449	Phthalic anhydride
67721	Hexachloroethane	1336363	Polychlorinated biphenyls (Aroclors)
822060	Hexamethylene-1,6-diisocyanate	1120714	1,3-Propane sultone
680319	Hexamethylphosphoramide	57578	beta-Propiolactone
110543	Hexane	123386	Propionaldehyde
302012	Hydrazine	114261	Propoxur (Baygon)
7647010	Hydrochloric acid	78875	Propylene dichloride (1,2-Dichloropropane)
7664393	Hydrogen fluoride (Hydrofluoric acid)	75569	Propylene oxide
7783064	Hydrogen sulfide	75558	1,2-Propylenimine (2-Methyl aziridine)
123319	Hydroquinone	91225	Quinoline
78591	Isophorone	106514	Quinone
58899	Lindane (all isomers)	100425	Styrene
108316	Maleic anhydride	96093	Styrene oxide
67561	Methanol	1746016	2,3,7,8-Tetrachlorodibenzo-p- dioxin
72435	Methoxychlor	79345	1,1,2,2-Tetrachloroethane
74839	Methyl bromide (Bromomethane)	127184	Tetrachloroethylene (Perchloroethylene)
74873	Methyl chloride (Chloromethane)	7550450	Titanium tetrachloride
71556	Methyl chloroform (1,1,1-Trichloroethane)	108883	Toluene
78933	Methyl ethyl ketone (2-Butanone)	95807	2,4-Toluene diamine
60344	Methyl hydrazine	584849	2,4-Toluene diisocyanate
74884	Methyl iodide (Iodomethane)	95534	o-Toluidine
108101	Methyl isobutyl ketone (Hexone)	8001352	Toxaphene (chlorinated camphene)
624839	Methyl isocyanate		1208211,2,4-Trichloroben zene
80626	Methyl methacrylate	79005	1,1,2-Trichloroethane
1634044	Methyl tert butyl ether	79016	Trichloroethylene
101144	4,4'-Methylene bis(2-chloroaniline)	95954	2,4,5-Trichlorophenol
75092	Methylene chloride (Dichloromethane)	88062	2,4,6-Trichlorophenol
101688	Methylene diphenyl diisocyanate (MDI)	121448	Triethylamine
101779	4,4'-Methylenedianiline	1582098	Trifluralin
91203	Naphthalene	540841	2,2,4-Trimethylpentane
98953	Nitrobenzene	108054	Vinyl acetate
92933	4-Nitrobiphenyl	593602	Vinyl bromide
100027	4-Nitrophenol	75014	Vinyl chloride
79469	2-Nitropropane	75354	Vinylidene chloride
684935	N-Nitroso-N-methylurea		
62759	N-Nitrosodimethylamine		
59892	N-Nitrosomorpholine		

(1,1-Dichloroethylene)

CAS Number	Chemical Name
1330207	Xylenes (isomers and mixture)
95476	o-Xylenes
108383	m-Xylenes
106423	p-Xylenes
0	Antimony Compounds
0	Arsenic Compounds (inorganic including arsine)
0	Beryllium Compounds
0	Cadmium Compounds
0	Chromium Compounds
0	Cobalt Compounds
0	Coke Oven Emissions
0	Cyanide Compounds ¹
0	Glycol ethers ²
0	Lead Compounds
0	Manganese Compounds
0	Mercury Compounds
0	Fine mineral fibers ³
0	Nickel Compounds
0	Polycyclic Organic Matter ⁴
0	Radionuclides (including radon) ⁵
0	Selenium Compounds

NOTE: For all listings above that contain the word "compounds" and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic, etc.) as part of that chemical's infrastructure.

¹ X'CN where X = H' or any other group where a formal dissociation may occur. For example KCN or Ca(CN)₂

² Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH₂CH₂)_n-OR' where
n = 1, 2, or 3
R = alkyl or aryl groups
R' = R, H, or groups which, when removed, yield glycol ethers with the structure: R-(OCH₂CH)_n-OH. Polymers are excluded from the glycol category.

³ Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.

⁴ Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 °C.

⁵ A type of atom which spontaneously undergoes radioactive decay.

APPENDIX J

NONATTAINMENT AREAS IN THE STATE OF WISCONSIN

APPENDIX J

NONATTAINMENT AREAS IN THE STATE OF WISCONSIN

NONATTAINMENT AREAS BY POLLUTANT ¹

OZONE (O₃)

Door County	Marginal
Kenosha County	Severe
Kewaunee County	Moderate
Manitowoc County	Moderate
Milwaukee County	Severe
Ozaukee County	Severe
Racine County	Severe
Sheboygan County	Moderate
Walworth County	Marginal
Washington County	Severe
Waukesha County	Severe

SULFUR DIOXIDE (SO₂)

Portions of the following cities are designated as nonattainment areas for either the primary or the secondary SO₂ standard. For a description of the nonattainment area boundaries please refer to the following pages.

Rhineland* (Oneida County)	Primary
Rib Mountain (Marathon County)	Secondary
Rothschild (Marathon County)	Primary
Weston (Marathon County)	Secondary

*The EPA has banned the construction of major sources of SO₂ in this nonattainment area.

TOTAL SUSPENDED PARTICULATE (TSP)

Portions of the following cities are designated as nonattainment areas for the secondary TSP standard. For a description of the nonattainment area boundaries please refer to the following pages.

Brokaw (Marathon County)
 Green Bay (Brown County)
 Kenosha (Kenosha County)
 Madison (Dane County)
 Manitowoc (Manitowoc County)
 Marshfield (Wood County)
 Milwaukee (Milwaukee County)
 Oshkosh (Winnebago County)
 Racine (Racine County)
 Superior (2 areas) (Douglas County)

¹Federal designation according to the 1990 Clean Air Act Amendments.

Waukesha (Waukesha County)

Rhineland
Primary SO₂ Boundary

North:

A line ENE from the intersection of Lynne and Maple Sts. to the west end of Abner St. Abner Street from west end to intersection of Abner St. and Thayer St.

East:

South of Thayer St. from intersection of Abner and Thayer Sts. to intersection of Thayer and Anderson Sts. Anderson St. south from intersection of Anderson and Thayer Sts. to intersection of Anderson and Davenport Sts. Davenport St. west from intersection of Anderson and Davenport Sts. to west bank of Wisconsin River. West bank of Wisconsin River south from Davenport St. to Norway St.

South:

Norway St. west from Wisconsin River extended to intersection of High View Parkway and Hillside Rd. High View Parkway west from intersection of High View Parkway and Hillside Road to intersection of High View Parkway and Davenport St.

West:

Davenport St. ENE from intersection of Davenport St. and High View Parkway to intersection of Davenport and Maple Sts. Maple St. north from intersection of Davenport and Maple Sts. to intersection of Maple and Lynne Sts.

Source: Federal Register, October 9, 1985 (41142).

Rib Mountain
Secondary SO₂ Area

The NW $\frac{1}{4}$ of Section 23.
The SW $\frac{1}{4}$ of Section 23.
The NW $\frac{1}{4}$ of Section 25.

Source: Federal Register, October 9, 1985 (41142).

Rothschild
Primary SO₂ Boundary

North: State Highway 29 from east bank of Wisconsin River east to Volkman St.

East: Volkman St. from State Highway 29 south to Lemke Ave.

South: Lemke Ave. from Volkman St. west to Becher Ave., Becher Ave. from Lemke Ave. west to Francis St. Weston Ave. from Francis St. extended east bank of Wisconsin River.

West: East bank of Wisconsin River, Weston Ave. extended north to State Highway 29.

Source: Federal Register, October 9, 1985 (41142).

Weston
Secondary SO₂ Boundary

North: State Highway 29 from Volkman St. north to Jelinck Ave. east to Alderson St.

East: Alderson St. from Jelinck Ave. south to Weston Ave.

South: Weston Ave. from Alderson St. west to Volkman St.

West: Volkman St. from Weston Ave. north to State Highway 29.

Source: Federal Register, October 9, 1985 (41142).

Brokaw
Secondary TSP Area

Corporate limits of the city of Brokaw.

Green Bay
Secondary TSP Boundary

North: Green Bay

West: Corner west Mason St. and Ashland Ave. north to Mather St., west to Crocker St., north on Crocker St. to Bylsby St., then to Green Bay.

South: Corner west Mason St. and Ashland Ave. east along west Mason St. to Irwin Ave.

East: Corner west Mason St. and Irwin Ave., north along Irwin Ave. to Green Bay.

Source: CFR 81.350, 1985

Kenosha
Secondary TSP Boundary

North: 52nd St. east from 39th Ave. to Lake Michigan

West: 39th Ave. south from 52nd St. to 67th St.

South: 67th St. from 39th Ave. to Lake Michigan

East: Lake Michigan

Source: CFR 81.350, 1985

Madison
Secondary TSP Boundary

North: Corner of Schlimgen Ave. and Packers Ave. west to Lakewood Blvd.

Northwest: Corner of Lakewood Blvd. and Del Mar Dr. south to Lake Mendota, continue along eastern shoreline of Lake Mendota to Charter St.

West: Charter St. north from Vilas St. to Lake Mendota

Southeast: Vilas St. east from Charter St. to West Washington Ave. continue southeast to Lake Monona, continue along west shoreline of Lake Monona northeast to Starkweather Creek.

North/northeast: Western branch of Starkweather Creek, northeast to Fair Oaks Ave., then north along Bryen St. to Milwaukee St., continue west to Oak St., then north to Aberg Ave., continue northwest to Packers Ave., then north to Schlimgen Ave.

Source: CFR 81.350, 1985

Manitowoc
Secondary TSP Boundary

North: East from Manitowoc River to York Street to Lake Michigan.

West: 14th Street south from Wollmer St. to Hamilton St.

South: Hamilton St. east from 14th St. to Lake Michigan.

East: Lake Michigan.

Source: CFR 81.350, 1985

Marshfield
Secondary TSP Boundary

North: Chicago and Northwestern railroad tracks.

West: Western border of section 18 north to Chicago and Northwestern railroad tracks.

South: Southern border of section 17 and 18.

East: Eastern border of section 17, north to Chicago and Northwestern railroad tracks.

Source: CFR 81.350, 1985.

Milwaukee
Secondary TSP Boundary

North: Michigan Ave. from corner of 36th St. to Lake Michigan.

West: 35th St. south from Michigan Ave. to National Ave., east on National Ave. to 6th St., south on 6th St. to Becher St.

South: Becher St. east from 6th St. to Lake Michigan.

East: Lake Michigan.

Source: Federal Register, October 9, 1985 (41142).

Oshkosh
Secondary TSP Boundary

North: Corner Irving Ave. and Wisconsin Ave. east to Bowen St.

West: Corner Ohio St. and west 11th Ave. north to Route 26/44, continue northeast along Route 26/44 to intersection with Irving Ave.

South: Corner Ohio St. and West 11th Ave., east along West 11th Ave. to Lake Winnebago.

East: Corner Irving Ave., and Bowen St., south along Bowen St. to Lake Winnebago.

Source: CFR 81.350, 1985.

Racine
Secondary TSP Boundary

North: Douglas Ave., north from Marquette St., to Rapids Dr., northwest on Rapids Dr., to intersection with Forest St., west to intersection with west boundary.

East: Marquette St. north from Washington Ave., to Douglas Ave.

South: Washington Ave., west from Grange Ave., to Marquette St.

West: North from corner of Grange Ave. and Washington Ave. north to Freres Ave. north to intersection with north boundary.

Source: CFR 81.350, 1985.

Superior
Secondary TSP Boundaries

Area 1

North: Superior Bay.

West: Superior Bay and St. Louis Bay shoreline from intersection with Belknap St. to intersection with E. St. east.

South: East from intersection with Belknap St. and Minnesota/Wisconsin border to Oaks Ave. south on Oaks Ave. from Belknap St. and 19th St. east on 19th St. from Oaks Ave. to Hill Ave. north on Hill Ave. to E. St. east, northeast on E. St. east to Minnesota/Wisconsin border.

East: Superior Bay.

Area 2

North: Corner East 8th St. and 37th St., north along 37th St. to Superior Bay.

West: Corner East 8th St. and 37th St., east along East 8th St. to intersection with last set of railroad tracks.

South: Intersection of last set of railroad tracks north to Allouez Bay.

East: Allouez Bay and Superior Bay North from point where south boundary intersects to intersection of 37th Ave. and shoreline.

Source: CFR 81.350, 1985.

Waukesha
Secondary TSP Boundary

North: Moreland Blvd. east from Frame Park Dr. to White Rock Ave., south on White Rock Ave. to Eales Ave. to Cleveland Ave.

East: Cleveland Ave. from Eales Ave. to Perkins Ave.

South: East Main St. from White Rock Ave. to the Strand, north on the Strand to Perkins Ave., east on Perkins Ave. from the Strand to Cleveland Ave.

West: White Rock Ave. from East Main St. to Frame Park Dr., Frame Park Dr. from Perkins Ave. to Moreland Blvd.

Source: CFR 81.350, 1985.

APPENDIX K

FEDERAL ENFORCEABILITY FOR SYNTHETIC MINOR NON-PART 70 SOURCE PERMITS

APPENDIX K

FEDERAL ENFORCEABILITY FOR SYNTHETIC MINOR NON-PART 70 SOURCE PERMITS

A *synthetic minor, non-part 70 source* permit is a federally enforceable state operating permit. To get this type of permit you must propose **federally enforceable** permit conditions which will limit your *potential to emit* of criteria pollutants and/or *hazardous air pollutants* to below *major source* levels (see page 5 of the instruction booklet.) Use form 4530-135, the supplemental information form, to propose federally enforceable limitations in your permit application.

The key to proposing restrictions on your *potential to emit* is to make them **federally enforceable**. To be considered federally enforceable, a restriction must be enforceable both legally and practically. U.S. EPA has provided detailed guidance on what is practically enforceable in a lengthy memorandum issued on June 13, 1989.

Production limits or operational limits are needed to restrict the *potential to emit* in a ***federally enforceable*** manner. Production limits are restrictions on the amount of final product which can be manufactured or otherwise produced by an *emissions unit*. Operational limits are restrictions on the manner in which the *emissions unit* is operated. Operational and production limits include restrictions on quantities of raw materials consumed, quantity of final product produced, fuel combusted, or hours of operation. Also, conditions which specify the operation and maintenance of air pollution control equipment that reduces emissions to a specified rate or operates at a specified efficiency level can be used as federally enforceable restrictions on the *potential to emit*.

For operational or production limits to be federally enforceable they must include record keeping to verify compliance with the limits. For example, permit restrictions on hours of operation or amount of final product produced, require a log of the hours of operation or records of the amount of final product produced. Likewise, a permit restriction requiring add-on controls with a specified efficiency, should also require that records of the operating parameters and assumptions used to determine the efficiency be kept. All logs and records must be kept available for inspection and retained throughout the life of the permit.

Generally speaking, emission limits are not considered federally enforceable. Emission limits are restrictions on the amount of a pollutant that can be emitted from an *emissions unit* over a given period of time.

There are two exceptions when emission limits can be used to restrict *potential to emit*, in a federally enforceable manner. First, a facility may propose an emission limit as a federally enforceable restriction if they also propose to install a continuous emission monitoring (CEM) system to show compliance with this emission limit. The proposal must request that the permit include requirements to install, maintain and operate a continuous emission monitoring (CEM) system, to retain CEM data, and to use CEM data to determine compliance with the emission limit.

Second, a facility that has a ***volatile organic compound*** (VOC) surface coating operation which uses a wide variety of coatings and has no add-on control equipment, may propose an emission limit as a federally enforceable restriction under the following limited circumstances. The DNR must determine that a particular surface coating operation has operating and production parameters (e.g., gallons of coating, quantities produced) that cannot be readily limited due to the wide variety of coatings and products and due to the unpredictable nature of the operation. Emission limits coupled with a requirement to calculate daily emissions may be used to restrict the *potential to emit*. The facility must keep the records necessary for this calculation, including daily quantities and the VOC content of each coating used.

Time periods for limiting production and operation also affect ***federal enforceability***. As discussed above, a limitation which reduces the *potential to emit* must restrict production or operation. However, for these limitations to be federally

enforceable, the time over which they extend should be as short as possible and should generally not exceed one month. The requirement for a monthly limit prevents having to wait for long periods of time to establish a facility's compliance status.

In some rare situations, it is not reasonable to hold a facility to a one month limit. In these cases, a limit spanning a longer time is appropriate if it is a rolling limit. However, this limit should not exceed an annual limit rolled on a monthly basis. Rolling limits that restrict production will be approved only for facilities with substantial and unpredictable annual variation in production, such as emergency boilers. Rolling limits may also be used for facilities which shut down or curtail operation during part of a year on a regular seasonal cycle. Rolling limits will only be acceptable if the possibility of using a month-by-month limit has been demonstrated to be impossible. For example, if a pulp drier is periodically shut down from December to April, you could propose a limit of zero hours of operation for each of those months, and then the appropriate hourly operation limit for each of the remaining months. Under no circumstances would a production or operation limit expressed on a calendar year annual basis be considered federally enforceable.

Example: Seesaws, Inc., manufactures playground equipment from fiber reinforced polyester resins. Styrene, a regulated hazardous air pollutant (see Appendix I of the instruction booklet,) is the only pollutant emitted during the process. The facility is a major source because potential emissions of styrene exceed 10 tons per year, yet actual emissions of this pollutant have never been over 6 tons per year. Seesaws wants to apply for a synthetic minor non-part 70 source permit. They fill out the application for a non-part 70 source permit and submit it by the due date for part 70 sources in their county.

On form 4530-135 the company must propose federally enforceable limitations to restrict potential emissions of styrene to less than 10 tons per year. Seesaws proposes:

- 1) Vapor suppressing resins shall be used which contain not more than 43% by weight styrene.
- 2) The vapor suppressing resins shall not emit more than 9% by weight of the styrene content in the resin.

The facility wide usage of resins shall not exceed 42,635 pounds of resin per month.

MSDS's of all resins being used and records of daily usage of resins shall be kept for 5 years to show compliance with these limitations.

The facility also provides sample calculations that show potential emissions are indeed limited to less than 10 tons per year:

$$\frac{42635 \text{ lb resin}}{\text{month}} \times \frac{12 \text{ months}}{\text{year}} \times \frac{(0.43)(0.09) \text{ lb styrene}}{\text{lb resin}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = \underline{9.9 \text{ tons Styrene}} \text{ per year}$$

Example: Parts Manufacturing Company makes small metal parts for farm implements. The facility, which is located in a severe ozone nonattainment area, consists of a small grey iron foundry, a hot water parts washer, and two spray paint booths. According to the facility's annual air emissions inventory reports for the past two years, the facility's actual emissions of volatile organic compounds and particulate matter are 21 tons per year and 18 tons per year respectively. However, potential emissions of volatile organic compounds are 85 tons per year and potential emissions of particulate matter 120 tons per year. This means that Parts Manufacturing is a major source for both volatile organic compounds and for particulate matter.

The company wants to apply for a synthetic minor non-part 70 source permit. They must propose federally enforceable conditions to limit both organic compound emissions from their paint booths and particulate

matter emissions from their foundry operations. They attach form 4530-135 with their proposal.

1. Limitation on the potential emissions of particulate matter to 100 tons per year.

No process in the grey iron foundry including the induction furnace P01, S11, the pouring and cooling process P02, S12, and the casting shakeout process P03, S13, may operate for more than 610 hours per month averaged over any 12 consecutive months.

Records will be kept on a daily basis of hours of operation of P01, P02, and P03. These records will be available at all times and will be retained for the life of this permit.

A sample calculation is provided based on maximum theoretical emissions of particulate matter of 27.4 lbs/hr:

$$\frac{27.4 \text{ lbs PM}}{\text{hour}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times \frac{610 \text{ hours}}{\text{month}} \times \frac{12 \text{ months}}{\text{year}} = \frac{99.9 \text{ tons PM}}{\text{year}}$$

2. Limitation on the potential emissions of volatile organic compounds. (Note that potential emissions of VOC's must be limited to less than 25 tons per year because the facility is located in a severe ozone nonattainment area.)

The facility may use only water based coatings which contain a maximum volatile organic compound content of 2.0 pounds VOC per gallon of coating less water as applied. (This limitation also more than satisfies the RACT limitations in S. NR 422, Wis. Adm. Code for miscellaneous metal parts.)

The gallons of coating (less water) used by this facility may not exceed 479 gallons per week averaged over any 52 consecutive weeks.

Daily records will be kept of coating usage which identify coating type, VOC content, and gallons used. Records will be kept for the 5 year life of the permit.

Sample calculations:

$$\frac{2.0 \text{ lbs VOC}}{\text{gal coating less water}} \times \frac{479 \text{ gal coating less water}}{\text{week}} \times \frac{52 \text{ weeks}}{\text{year}} = \frac{24.9 \text{ lbs VOC}}{\text{year}}$$

APPENDIX L

FILING DATES FOR EXISTING SOURCE OPERATION PERMIT APPLICATIONS

APPENDIX L
FILING DATES FOR EXISTING SOURCE
OPERATION PERMIT APPLICATIONS

County of location	Application filing date for part 70 sources	Application filing date for non-part 70 sources
Adams	June 1, 1994	August 1, 1997
Ashland	June 1, 1994	August 1, 1997
Barron	March 1, 1995	May 1, 1998
Bayfield	June 1, 1995	August 1, 1998
Brown	May 1, 1995	July 1, 1998
Buffalo	October 1, 1994	December 1, 1997
Burnett	December 1, 1994	February 1, 1998
Calumet	May 1, 1994	July 1, 1997
Chippewa	June 1, 1995	August 1, 1998
Clark	March 1, 1995	May 1, 1998
Columbia	May 1, 1994	July 1, 1997
Crawford	May 1, 1994	July 1, 1997
Dane	September 1, 1995	November 1, 1998
Dodge	May 1, 1995	July 1, 1998
Door	September 1, 1994	November 1, 1997
Douglas	May 1, 1994	August 1, 1998
Dunn	August 1, 1994	October 1, 1997
Eau Claire	December 1, 1994	February 1, 1998
Florence	August 1, 1994	October 1, 1997
Fond du Lac	September 1, 1994	November 1, 1997
Forest	June 1, 1994	August 1, 1997
Grant	August 1, 1994	October 1, 1997
Green Lake	May 1, 1995	July 1, 1998
Green	February 1, 1995	April 1, 1998
Iowa	January 1, 1995	March 1, 1998

County of location	Application filing date for part 70 sources	Application filing date for non-part 70 sources
Iron	December 1, 1994	February 1, 1998
Jackson	March 1, 1995	May 1, 1998
Jefferson	November 1, 1994	January 1, 1998
Juneau	June 1, 1994	August 1, 1997
Kenosha	January 1, 1995	March 1, 1998
Kewaunee	September 1, 1994	November 1, 1997
La Crosse	September 1, 1995	November 1, 1998
Lafayette	January 1, 1995	March 1, 1998
Langlade	June 1, 1994	August 1, 1997
Lincoln	August 1, 1994	October 1, 1997
Manitowoc	February 1, 1995	April 1, 1998
Marathon	May 1, 1995	July 1, 1998
Marinette	August 1, 1994	October 1, 1997
Marquette	May 1, 1995	July 1, 1998
Menominee	July 1, 1994	September 1, 1997
Milwaukee, south of Wisconsin Avenue	July 1, 1995	June 1, 1998
Milwaukee, north of Wisconsin Avenue	April 1, 1995	September 1, 1998
Monroe	March 1, 1995	May 1, 1998
Oconto	July 1, 1994	September 1, 1997
Oneida	May 1, 1994	July 1, 1997
Outagamie	November 1, 1994	January 1, 1998
Ozaukee	July 1, 1994	September 1, 1997
Pepin	December 1, 1994	February 1, 1998
Pierce	June 1, 1994	August 1, 1997
Polk	March 1, 1995	May 1, 1998
Portage	November 1, 1994	January 1, 1998
Price	June 1, 1995	July 1, 1997

County of location	Application filing date for part 70 sources	Application filing date for non-part 70 sources
Racine	January 1, 1995	March 1, 1998
Richland	August 1, 1994	October 1, 1997
Rock	February 1, 1995	April 1, 1998
Rusk	December 1, 1994	February 1, 1998
Sauk	June 1, 1994	August 1, 1997
Sawyer	December 1, 1994	February 1, 1998
Shawano	June 1, 1994	August 1, 1997
Sheboygan	October 1, 1994	December 1, 1997
St Croix	August 1, 1994	October 1, 1997
Taylor	December 1, 1994	February 1, 1998
Trempealeau	October 1, 1994	December 1, 1997
Vernon	December 1, 1994	February 1, 1998
Vilas	May 1, 1994	July 1, 1997
Walworth	May 1, 1994	July 1, 1997
Washburn	December 1, 1994	February 1, 1998
Washington	June 1, 1994	August 1, 1997
Waukesha	October 1, 1995	December 1, 1998
Waupaca	September 1, 1994	November 1, 1997
Waushara	September 1, 1994	November 1, 1997
Winnebago	August 1, 1995	October 1, 1998
Wood	February 1, 1995	April 1, 1998
Portable sources located anywhere in Wisconsin	October 1, 1995	December 1, 1998

APPENDIX M

SUSPECTED AND CONFIRMED HUMAN CARCINOGENS

APPENDIX M

SUSPECTED AND CONFIRMED HUMAN CARCINOGENS

50-00-0	Formaldehyde	30005000060
50-32-8	Benzo(a)pyrene	30005032863
56-23-5	Carbon tetrachloride	30005623560
57-14-7	1,1-Dimethylhydrazine	30005714760
57-57-8	beta-Propiolactone	30005757860
57-74-9	Chlordane	20005774960
58-89-9*	Lindane and other hexachlorocyclohexane isomers	30005889960
60-34-4	Methyl hydrazine	10006034460
60-57-1	Dieldrin	20006057100
61-82-5	Amitrole	20006182500
62-53-3	Aniline	10006253360
62-75-9	N-Nitrosodimethylamine	30006275969
67-66-3	Chloroform	30006766360
67-72-1	Hexachloroethane	00006772160
71-43-2	Benzene	30007143260
74-83-9	Methyl bromide	20007483960
74-87-3	Methyl chloride	10007487360
74-88-4	Methyl iodide	30007488460
75-01-4	Vinyl chloride	30007501460
75-07-0	Acetaldehyde	10007507060
75-09-2	Methylene chloride	10007509290
75-21-8	Ethylene oxide	30007521860
75-35-4	Vinylidene chloride	40007535460
75-55-8	Propylenimine	30007555860
75-56-9	Propylene oxide	30007556960
76-44-8	Heptachlor	20007644860
77-78-1	Dimethyl sulfate	30007778160
78-87-5	Propylene dichloride	40007887560
79-00-5	1,1,2-Trichloroethane	10007900560
79-01-6	Trichloroethylene	10007901660
79-06-1	Acrylamide	10007906160
79-34-5	1,1,2,2-Tetrachloroethane	10007934560
79-44-7	Dimethyl carbamoyl chloride	30007944760
79-46-9	2-Nitropropane	30007946960
87-68-3	Hexachlorobutadiene	20008768360
90-04-0*	o-Anisidine and o-anisidine hydrochloride	30009004062
91-59-8	2-Naphthylamine	30009159800
91-94-1	3,3'-Dichlorobenzidine	30009194160
92-67-1	4-Aminobiphenyl	30009267160
92-87-5	Benidine	30009287560
92-93-3	4-Nitrobiphenyl	00009293360
95-53-4	o-Toluidine	30009553460
100-42-5	Styrene, monomer	10010042560
100-63-0	Phenylhydrazine	10010063000
101-14-4	4,4'-Methylene bis(2-chloroaniline) (MOCA)	30010114460
101-77-9*	4,4'-Methylenedianiline (and dihydrochloride)	30010177960
106-87-6	Vinyl cyclohexene dioxide	10010687600

106-89-8	Epichlorohydrin	30010689860
106-93-4	1,2-Dibromoethane (EDB)	30010693460
106-99-0	1,3-Butadiene	10010699060
107-05-1	Allyl chloride	10010705160
107-06-2	1,2-Dichloroethane (EDC)	30010706260
107-13-1	Acrylonitrile	30010713160
107-30-2	Chloromethyl methyl ether (CMME)	30010730260
117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	30011781760
119-93-7	3,3'-Dimethylbenzidine (o-Tolidine)	30011993760
122-60-1	Phenyl glycidyl ether (PGE)	40012260100
123-91-1	1,4-Dioxane	30012391160
126-99-8	beta-Chloroprene	40012699860
127-18-4	Perchloroethylene	10012718490
140-88-5	Ethyl acrylate	10014088560
151-56-4	Ethylenimine	40015156460
218-01-9	Benzo(a)phenanthrene	00021801960
302-01-2*	Hydrazine and hydrazine sulfate	30030201260
309-00-2	Aldrin	20030900200
334-88-3	Diazomethane	40033488360
542-75-6	Dichloropropene	20054275660
542-88-1	Bis(chloromethyl) ether (BCME) and technical grade	30054288160
584-84-9	Toluene-2,4-diisocyanate (TDI)	10058484960
593-60-2	Vinyl bromide	00059360260
680-31-9	Hexamethyl phosphoramidate	30068031960
1120-71-4	1,3-Propane sultone	30112071460
1300-73-8	Xylidine, mixed isomers	40130073800
1332-21-4*	Asbestos, all forms	30133221460
1333-86-4	Carbon black	40133386400
2238-07-5	Diglycidyl ether (DGE)	10223807500
7439-92-1*	Lead compounds	00743992160
7440-02-0*	Nickel compounds other than nickel subsulfide, as Ni	30744002060
7440-38-2*	Arsenic and inorganic compounds, as As	30744038260
7440-41-7*	Beryllium and beryllium compounds, as Be	30744041760
7440-43-9*	Cadmium and cadmium compounds, as Cd	30744043960
7440-47-3*	Chromium (VI) compounds, as Cr, water insoluble	30744047362
7440-48-4	Cobalt, as Co, metal, dust	40744048460
8001-35-2	Chlorinated camphene	20800135260
12035-72-2	Nickel subsulfide	31203572200
14977-61-8	Chromyl chloride, as Cr	31497761800
25321-14-6*	Dinitrotoluene	42532114660
29191-52-4	Anisidine	32919152400